RECREATION ACCESS ADVISORY COMMITTEE

Recommendations for Accessibility Guidelines:

Recreational Facilities and Outdoor Developed Areas

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developed for:
U.S. Architectural and Transportation Barriers Compliance Board
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I M P O R T A N T

N o t i c e

This report contains recommendations only and are not proposed or final accessibility guidelines. The draft guidelines language does not necessarily conform to the ADAAG format or numbering system. Persons reviewing the report need not comment on the format of the report. The Access Board will address format issues when it develops a notice of proposed rulemaking. Persons reviewing the report should focus on the substance of the recommendations.

The final report of the Recreation Access Advisory Committee is the result of a year long effort to provide the Access Board with information and advice in the development of accessibility guidelines for recreation facilities and outdoor developed areas. The committee was requested to accomplish the following objectives:

- Develop a list of the various types of recreation facilities and outdoor developed areas;

- Identify the design features of each facility type that are not adequately addressed by the Americans with Disabilities Act Accessibility Guidelines (ADAAG);

- Consider any unique design issues or constraints affecting access to each facility type;

- Review any existing voluntary guidelines for providing access to the various facility types; and

- Make recommendations for accessibility guidelines for each facility type.

The committee organized itself into six subcommittees based on facility types to accomplish these objectives. The subcommittees include:

1. Sports Facilities
2. Places of Amusement
3. Play Settings
4. Golf
5. Boating and Fishing Facilities
6. Outdoor Developed Areas

Each subcommittee approached their work with the premise that every newly constructed and altered recreation facility should be accessible. In some cases, the subcommittees recommended amending existing ADAAG sections to address specific design features. In other cases, the subcommittees recommended new scoping provisions and technical specifications for ADAAG and drafted recommended language with rationale.

Individuals are encouraged to comment on the recommendations contained in this report in writing to:

Access Board
Recreation Report
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Washington, DC 20004-1111

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The Americans with Disabilities Act became effective for public and private providers of recreation, leisure, and entertainment on January 26, 1992. Various regulations have been issued for the implementation of this civil rights law, which prohibits discrimination on the basis of disability. Among those regulations authorized by the Act are regulations regarding the accessible design of recreation facilities and outdoor developed recreation areas.

The Access Board is the federal agency responsible for the development of design guidelines for accessibility. Recognizing the broad scope of programs, entities and structures which are made available to the public for recreation, an advisory committee was appointed to provide advice and information to the Access Board on accessible design in these environments. Craig Kiser of Florida, a member of the Access Board, served as the Board's liaison to the Committee.

Access to recreation facilities and outdoor developed recreation areas is a valuable right for people with and without disabilities. As the Americans with Disabilities Act Accessibility Guidelines (ADAAG) have ensured that places of public accommodation and the workplace will be accessible, these recommendations are the first step toward ensuring that beaches, golf courses, playgrounds, sports facilities, amusement parks, swimming pools, boat launch facilities, campgrounds, and trails, will be designed for accessibility. These unique sites are part of the fabric of life in America and will be accessible to people with disabilities.

Committee Membership

There are 27 members on the Committee, all experts in their areas of knowledge. In order to have diverse input, the members represent people with disabilities, manufacturers of leisure products, operators of leisure facilities, public agencies, designers, and others interested in accessibility. The members also represent many professional disciplines, including architecture, law, engineering, manufacturing, and construction. The members include:

John McGovern of the Northern Suburban Special Recreation Association in Northfield, Illinois who was appointed as chair of the Committee and represented the National Recreation and Park Association; Peter Axelson, with Beneficial Designs in Santa Cruz, California; Kim Beasley, representing the Paralyzed Veterans of America in Washington, D.C.; Jack Buchheister with Winter Park Resort in Winter Park, Colorado, representing the American Ski Federation; George DeVilbiss of Bethesda, Maryland, representing Self Help for Hard of Hearing People; Ron Drach (represented by Mark Giblin) with Disabled American Veterans in Washington, D.C.; Marcie Goldstein of Clifton Park, New York, representing the National Council on Independent Living; Susan Goltsman with Moore, Iacofano, and Goltsman in Berkeley, California, representing the American Society of Landscape Architects; and Rodney Grozier of Y.M.C.A. of the U.S.A. from Chicago, Illinois.

Others serving are Tom Hall of Adventure World, in Largo, Maryland, representing the International Association of Amusement Parks and Attractions; Drue Kale, of the New Jersey Department of Community Affairs; Steven King of Landscape Structures in Delano, Minnesota, representing the American Society for Testing and Materials (ASTM) Public Playground Safety Committee; Francine Wai with the State of Hawaii Commission on Persons with Disabilities; Katherine McGuinness of Katherine McGuinness & Associates in Waltham, Massachusetts; Joe Meade of the U.S. Forest Service; David Park of the National Park Service; and Robert Pike of Environmental Access in Portland, Oregon.

Also serving are George Renault of the Burning Tree Club in Bethesda, Maryland, representing the Golf Course Superintendents Association of America; Judy Rice of the U.S. Army Corps of Engineers; Catherine Roth of Universal Studios/Florida in Orlando, Florida; John Paul Scott of Walt Disney Imagineering in Glendale, California; Richard Skaff of the City and County of San Francisco Department of Public Works; James E. Strates of James E. Strates Shows in Orlando, Florida, representing Outdoor Amusement Business Association; Henry Thrower of the Professional Golfer's Association in Palm Beach Gardens, Florida; Judith Wheeler of the Michigan Department of Natural Resources in Lansing, Michigan, representing the States Organization for Boating Access (SOBA); Jan Wilson of the United States Olympic Committee in Colorado Springs,

Colorado; and Kenneth Wiseman of Lehman, Smith, and Wiseman Associates in Washington, D.C.

Meetings

The Recreation Access Advisory Committee met first in July, 1993 in Washington, D.C. At that meeting, the Committee discussed the scope of work, heard representatives of the Access Board and the Department of Justice explain pertinent portions of the Americans with Disabilities Act, and divided into subcommittees to address specific leisure environments. The Committee also worked as a group to identify leisure environments where a structure or human-made improvement was necessary for that recreation to occur.

Four other working meetings of the full Committee were held. The Committee met in October in San Jose, California in conjunction with the National Recreation and Park Association annual Congress; in January, March and May in Washington, D.C., and finally in July in Washington, D.C. to report to the Access Board. Between 50,000 and 60,000 person-hours of work have gone into this Committee effort.

At most meetings, the Committee met as a whole to hear issues which affected all subcommittees, or to hear reports from subcommittees, and then separated to meet in subcommittee to work on the details of how to provide accessibility in the environments assigned to the subcommittee.

Subcommittee Assignments

The subcommittee approach was vital to the success of the Committee, as it allowed members to concentrate their expertise in the areas with which they had the most knowledge. The leisure environments fit into six basic areas. These are sports facilities, places of amusement, playgrounds, golf, outdoor developed recreation areas, and recreational boating and fishing. Committee members with expertise in areas within the subcommittees were appointed to one subcommittee. A subcommittee chair, and in one case a co-chair, was also appointed. Those assignments are below:

SPORTS FACILITIES: Kim Beasley, Chair; Rodney Grozier, Kenneth Wiseman, George DeVilbiss, Jan Wilson, and Robert Pike.

PLACES OF AMUSEMENT: Tom Hall and John Paul Scott, Co-Chairs; Marcie Goldstein, Catherine Roth, and James Strates. Craig Kiser, member of the Access Board, was also involved with this subcommittee.

PLAY AREA SETTINGS: Susan Goltsman, Chair; Steven King, John McGovern, and Richard Skaff.

GOLF: Henry Thrower, Chair; and George Renault.

BOATING AND FISHING FACILITIES: Judith Wheeler, Chair; Ron Drach (represented by Mark Giblin), Katherine McGuinness, and Francine Wai.

OUTDOOR DEVELOPED RECREATION AREAS: Dave Park, Chair; Peter Axelson, Joe Meade, Drue Kale, Judy Rice, and Jack Buchheister.

Subcommittee Work

The subcommittees all had the same charge. The approach was based on the assumption that every new or altered environment shall be made accessible. Subcommittees met five to ten times, many times in person at other conferences, sometimes just as the subcommittee, and often by conference call. At each meeting, public comment time was made available. All subcommittees did their own form of outreach, seeking people with disabilities who had expertise in the area of study or knew someone with expertise. Each subcommittee had to consider that both title II (State and local government facilities) and title III (public accommodations and commercial facilities) may be subject to the Board's final recommendations.

The charge to each subcommittee was simple and comprehensive. First, examine existing design guidelines for applicability to the subcommittee's environments. ADAAG was reviewed carefully; if the ADAAG provisions were adequate for a recreation environment, no change or new requirement was needed.

Second, there may be small changes in definitions or a need for the addition of text, which will enable

ADAAG to address certain elements in a recreation environment. Where a change in definition or technical requirements can result in a requirement for access, language is suggested by the subcommittees.

Third, it may be clear that ADAAG in its present form cannot address certain elements in certain leisure environments. In that situation, the subcommittees were asked to prepare both scoping language and technical requirements for that element. A rationale for these positions is included. Where possible, advisory language was offered which provides the public with greater insight about the recommendation.

Fourth, it was anticipated that there would be a number of elements where accessible design options could not be recommended without further research, or without resulting in an alteration in the fundamental nature of the element. Subcommittees were encouraged to identify these issues and articulate potential solutions and conflicts. Subcommittees also identified areas where a recommendation for access conflicted with a law or regulation for another reason, such as worker safety or preservation of open space.

It was also anticipated that not every subcommittee, again because of the scope of work, would adequately address every element or every environment. Access to ski area chairlifts and access to soft contained play systems are two examples where more information is needed. Subcommittees were asked here to identify those areas where unfinished work exists.

Finally, subcommittees were limited to design guidelines for newly constructed recreation facilities and outdoor developed recreation areas, and existing facilities or areas where an alteration occurs. The work of the Committee does not necessarily apply to existing facilities and areas without an alteration or addition. Not all subcommittees advanced to guidelines for alterations.

Subcommittees reported to the full Committee and accepted suggestions and questions from the full Committee. But, because the scope of work was so large, not every member of the Committee is fully aware of the recommendations of all six subcommittees. Thus, the subcommittee reports tend to represent a consensus of the opinions of the members of the subcommittee, but not necessarily of the full Committee.

The Work of Others

The Committee and subcommittee meetings were heavily attended by other people with disabilities, professionals, and individuals not on the Committee. More than 250 people worked actively with one or more subcommittees, made public comment, submitted written comment, or attended meetings and provided information. Among the groups that provided significant input in this process are: The Association of People with Severe Handicaps, Eastern Paralyzed Veterans Association, World Water Park Association, Six Flags Theme Park, Miniature Golf Association of America, Paramount Parks, National Center on Accessibility, Association of Disabled Golfers, Golf Course Owners Association, National Pool and Spa Institute, American Society of Golf Course Architects, Club Corporation International, Universal Studios/Hollywood, International Association of Fairs and Expositions, and the Amusement Industry Manufacturers and Suppliers, International.

In addition, many organizations have published advisory material regarding access in leisure environments. Two states (New Jersey and California) have statutory requirements. SOBA (boating and fishing) and ASTM (public playgrounds) have both issued guidelines for industry compliance. The U.S. Forest Service and the National Park Service have published materials in this area. All were thoroughly reviewed and constitute a considerable part of the recommendations in this report.

Several groups deserve congratulations for their efforts. The National Council on Independent Living surveyed members and conducted a forum on access at their April national conference. Almost half the state affiliates of the National Recreation and Park Association regularly reviewed the work of the Committee and provided comments back to the Committee.

The ASTM committee on Public Playground Safety was represented on the Committee and contributed greatly to the work of the Committee. The ASTM Soft Contained Play Systems committee provided valuable information about this young and growing part of the leisure industry. The ASTM Playground Surfacing work group interacted closely with the Committee, and is accelerating work on the development of a measure of accessibility in playground surfaces. The ASTM Amusement Ride Device committee provided valuable information and assistance.

Finally, the ANSI B77 (American National Standards Institute) committee on ski area operations has agreed to assist by coordinating research on some of the issues regarding ski area accessibility. Without this tremendous effort by others, this report would not be as complete. The dedication of both consumers and professionals to this issue has been evident from the beginning of the process.

Department of Justice Issues

For many recreation environments, it is nearly impossible to separate the design issues, over which the Access Board has purview, from program or policy issues, over which the Department of Justice has purview. The mesh between safety and access is a good example. The nature of certain recreation experiences is such that risk is present and skill and ability are required to participate without injury. Without concern for safety, design solutions for access can cause more problems and injuries.

Throughout the work of the subcommittees, questions regarding this blend of program and design were garnered and forwarded to the Department of Justice. Four representatives of the Department attended the May meeting of the Committee for an informal discussion of these issues. For the most part, what was clear is that the ADA is a complaint-driven statute and that the facts of a complaint can decide compliance. Many issues need further examination and those are highlighted throughout this report.

Subcommittee Reports

The reports of the six subcommittees follow. This is the substance of the report and again, tends to represent a consensus of the members of the subcommittee. The subcommittees, the public who consulted with the subcommittees, and consumers, have worked hard to generate these recommendations.

SPORTS FACILITIES SUBCOMMITTEE

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SPORTS FACILITY COMPONENTS, ELEMENTS, AND SPACES
SUBCOMMITTEE COMMENTS ON ASSEMBLY AREA STUDY
SUBCOMMITTEE-PROPOSED CHANGES TO ADAAG

☛ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

INTRODUCTION

The following individuals served as members of the Sports Facilities subcommittee and brought their unique perspective to the resultant analysis and recommendations:

- Mr. Kim A. Beasley, AIA, Chairman, Paralyzed Veterans of America
- Mr. Kenneth Wiseman, AIA, Lehman Smith Wiseman & Associates
- Mr. Robert Pike, Esquire, Environmental Access, Inc.
- Mr. Rodney Grozier, AIA, YMCA of the USA
- Mr. George DeVilbiss, Self-Help for Hard-of-Hearing People

Additional assistance was provided by the following individuals:

- Ms. Soy L. Williams, Paralyzed Veterans of America
- Mr. Brian Black, Eastern Paralyzed Veterans Association

The following industry representatives provided helpful insights and recommendations:

- Mr. David Karmol, National Spa and Pool Institute
- Mr. William Conner, American Society of Theatre Consultants
- Mr. Roy Sommerhof, Major League Baseball Stadium Operators Association
- Mr. William Blair, Del Mar Race Track, Del Mar, California

Sports Facilities Overview/Philosophy

The Sports Facilities subcommittee began with the premise that all new sports facilities can and should be designed to be usable by persons with disabilities. The primary task involved the identification of sports facility elements and spaces that are unique to each specific sport, and that would fundamentally alter the sport if ADA Accessibility Guidelines were applied. The subcommittee's comprehensive analysis of sports facilities, and resultant design recommendations, strive to increase recreation, sports, and employment opportunities for persons with disabilities.

EXECUTIVE SUMMARY

The following summary analysis of sports facilities explores the unique and common elements and spaces that are potentially affected by ADA Accessibility Guidelines.

Field Sports

- baseball
- lacrosse
- soccer
- field (track)
- outdoor track
- softball
- field hockey
- polo
- football
- rugby

1. Accessible Route

• An accessible route should be required to gain access to the "field-of-play"; definition of "field-of-play" is necessary to delineate this proposed requirement.

• ADAAG requirement for an accessible route that connects accessible buildings, facilities, elements, and spaces is applicable to ancillary elements and spaces, and also to public spaces.

• Certain materials used for surfacing of the field-of-play, such as grass, sand, soil, and artificial turf, do not fully meet the ADAAG requirement for firm, slip-resistant surfaces. They are, however, intrinsic to certain sports and essential for athlete safety. No change is recommended.

• Provision of temporary/removable surfacing materials may be needed to allow access to the field-of-play so as to achieve a balance between safety and accessibility.

2. Dugouts

• Dugouts are non-public spaces used only by participating team members.

• Dugouts should be connected by an accessible route to locker rooms, bat-swing areas, and the field-of-play.

• "Field-of-play" is considered a "performing area"; provision of an accessible route from the dugout to the field-of-play by the use of a platform lift is allowed by ADAAG.

3. Temporary Facilities

• Temporary facilities, such as those constructed on the field-of-play for graduation, half-time, or medal ceremonies, must comply with ADAAG.

4. Safety Barriers

• Padded gates and entrances are designed to absorb impact by athletes; they are essential to the safety of athletes. They may not meet strict access requirements and may require a qualified exemption.

5. Staging Areas

• Accessible route should connect staging areas with the field-of-play.

• ADAAG may currently permit lift access from staging areas to "areas of performance."

6. Public Areas

• All public areas should be ADAAG-compliant.

Court Sports

- badminton
- indoor soccer
- team handball
- basketball
- jai alai
- tennis
- handball
- racquetball
- volleyball
- indoor football
- squash
- walleyball

1. Accessible Route

• Accessible route-of-travel to the field-of-play should be required.

• Changes in floor level that occur at transition to the field-of-play should meet ADAAG.

2. Field-of-Play

• Field-of-play generally meets the ADAAG requirement for firm, slip-resistant surface.

3. Entry Doors (handball, squash, racquetball courts)

• Small, narrow doors are traditionally used. Insufficient maneuvering space at doors is self-imposed; doors should be redesigned to meet ADAAG.

4. Door Hardware (handball, squash, racquetball courts)

• Flush/recessed hardware is difficult to grasp and operate. Development of accessible hardware that meets existing ADAAG requirements by the industry is foreseen and should be required.

5. Official's Platform/Seat (volleyball, tennis courts)

• Elevated seats for officials are considered chattel and non-occupiable space accessed only by ladder.

• Seats are considered individual work stations: a Title I issue.

Rink Sports

- curling
- roller skating
- speed skating - long track
- ice hockey
- sledge hockey
- ice skating
- speed skating - short track
- rollerblading

1. Accessible Route (ice rinks)

• Inherent characteristics of field-of-play material (i.e., ice) cannot be changed to meet ADAAG requirements. Accessible routes can be provided at temporary events by the use of carpet, rubber mats, and the like.

• At transition onto the ice, a step resulting from the thickness of the ice is common. Distinction between the ice and surrounding surfaces is highly desirable for the safety of ice users. It is extremely difficult to eliminate this step because ice thickness varies as much as 1 or 2 inches.

• Floor surfaces at ancillary areas, composed primarily of rubber mesh/hard rubber, may not meet ADAAG, but are necessary to drain water resulting from melting ice away from walking surfaces.

• Further research is recommended before solutions are developed.

2. Guardrail/Gate

• Door opening force may not meet ADAAG due to the heavy weight of these "gates" that are designed to take the impact of skaters. ADAAG-compliant gates may jeopardize the safety of players. No conclusion was reached.

• Installing ADAAG-compliant hardware on the competition side of gates would jeopardize the safety of players.

3. Staging Areas

• Benches, penalty boxes, judges'/officials' areas, and the like are covered by existing ADAAG requirements.

• These areas are not public spaces. They should be accessible to the extent required by ADAAG.

Aquatic Facilities

- competition pools
- leisure pools
- therapy pools
- diving pools
- natatoria
- wading pools
- lap pools
- public pools
- whirlpools/spas

1. Accessible Route into the Water

• Means of access into the water should allow individuals to use the facility independently and in a dignified manner.

• Three different means of providing access into the water are available: ramp, transfer tier, lift. Each means poses a different level of challenge. Ramps may require the additional use of a pool chair. Buoyancy and water resistance while descending or ascending the ramp deserve further research. Transfer tiers pose a higher level of physical challenge to the user. Lifts may require attendant assistance.

• One means of providing access into the water should be required. For pools that exceed a certain size, two means should be required; further study of the determining size should be conducted. Extensive advisory information should be provided to assist in the selection of an appropriate method by a particular facility.

Indoor Multipurpose Facilities

- aerobic studios
- fitness centers
- martial arts
- ballet
- gymnasia
- wrestling
- dance
- gymnastics

1. Accessible Route

• Surface and accessible route width are covered by existing ADAAG. Protruding objects may be problematic: weight and exercise machines have hanging bars or devices that may injure someone with a visual impairment. Recommend exemption from ADAAG 4.4.

• Floor surfaces generally meet ADAAG. Exceptions include soft exercise mats, and raised mats for therapy and instruction that are provided for the safety of the user. No change recommended.

• Raised platforms provided as weight lifting stations. Platform protects the otherwise typical floor surface. Alternative accommodations, such as sunken stations, should be explored. Otherwise, ramps up to the platform should be provided.

2. Equipment

• Accessible weight and exercise equipment falls outside the scope of the subcommittee. Bolted-down equipment may be considered as built-in elements: these may be required to meet ADAAG.

3. Assistive Listening Systems (ALS)

• ALS's should be provided to ensure effective communication with, and full participation of, individuals with hearing impairments in instructional classes such as aerobics, dance, and martial arts.

4. Multi-level Suspended Tracks

• Such tracks will probably be covered by the elevator/vertical access exemption in ADAAG in title III facilities, but not in title II facilities.

5. Cuspidors

• Cuspidors should be accessible. Water fountain criteria could be applied, with slight modification.

6. Saunas and Steam Rooms

• Transition at doorways should meet ADAAG.

• Clear floor space and a built-in bench that facilitates transfer by a wheelchair user should be provided within the sauna or steam room. This may require the assistance of an attendant to remove/bring the chair from/to the room. A signalling device should be required within the room.

Other Facilities

1. Bowling Centers

• Accessible route should be provided to the settee areas, which are typically recessed to allow spectators a view over seated players while each competitor bowls.

• Polished wood floor surface is an integral part of the sport. No change anticipated.

• Ball retrieval mechanism and trough should be provided with adjacent maneuvering space for wheelchair users. Reach may be restricted.

• Access to employee areas, such as the those where pin-setting machines are located, needs to be studied.

2. Horse Racing Facilities

• Spectator services and areas, such as parking, concession stands, and entrances, are covered by existing ADAAG.

• Voucher machines provide an alternative for individuals with hearing impairments at wagering windows. May require "tactile" features.

• Floor and ground surface at paddock areas, winner's circle, stables, and tack rooms are composed of soil/mulch/bedding material for safety of horses and riders. Safety and welfare of horse/rider must take precedence over meeting the existing ADAAG requirement for firm surfaces of accessible route. This will require exemption language.

3. Indoor Track

• Banked tracks are used primarily for competition. Although they do not meet the ADAAG requirement for cross slope for an accessible route, the slope is inherent to the sport. No change is recommended.

• Accessible route to the track should be provided.

Common Elements and Systems

1. Assistive Listening Systems (ALS)

• ALS's should be provided in spectator seating areas as required in ADAAG.

• Consideration should be given to requiring the provision of ALS's in other areas, such as concession stands, ticket sales booths, and instructional studios (e.g., aerobic, martial arts, dance studios).

• ALS's may be required in other areas to facilitate effective communication as part of auxiliary aids and services. This, however, is outside the purview of the subcommittee.

2. Locker Rooms

• Subcommittee recommends the provision of single-use unisex, or "family", locker rooms in addition to single-sex locker rooms, if provided.

• An individual shower, which facilitates transfer by a wheelchair user, should be provided in addition to gang shower facilities, if any.

• Dressing/locker room benches situated between locker rows do not provide back support.

3. Spectator Seating

• Use of adaptable seats that allow flexible seating arrangements and meet ADAAG is beneficial both to persons with disabilities and to facility operators.

• The issue of vertical integration vs. enhanced sightlines needs further study. A percentage of accessible wheelchair locations could be designed with enhanced sightlines, while others would be designed for vertical integration.

SPORTS FACILITY COMPONENTS, ELEMENTS, AND SPACES

The following analysis of sports facilities explores the unique and common elements and spaces that are potentially affected by ADA Accessibility Guidelines. A general presentation of accessibility issues is followed by a summary matrix. Each section concludes with proposed changes or additions to current ADA Accessibility Guidelines.

Field Sports

1. Issues. Field sports are those sports activities that use a natural turf or synthetic surface as the field-of-play. The field-of-play is clearly defined by boundary lines or other physical barriers. These facilities include, but are not limited to the following sports:

- baseball
- outdoor track
- field (track)
- polo
- field hockey
- rugby
- football
- soccer
- lacrosse
- softball

Providing access for persons with disabilities to these sports facilities requires a basic understanding of common elements that may be inherently inaccessible. Often the field-of-play for most of these facilities is natural turf or grass. Technically, natural turf does not meet the accessible route requirement for a firm, stable, and slip-resistant surface.

Moreover, depending on weather conditions and field maintenance, the condition of the field can vary from day to day. On the other hand, synthetic turf surfaces may have the required characteristics of an accessible route. The accessible route requirement, as well as other applicable requirements, is discussed in the following section:

a. Accessible Route - The subcommittee proposes that the field-of-play for all field sports be served by an accessible route as defined by ADAAG 4.3. The application of this standard, however, requires a clear definition of "field-of-play". In addition, access to the field-of-play is more complicated in large-scale facilities and, therefore, may require further study. What is the field-of-play? Does the accessible route end at the field-of-play? What elements are connected?

"Field-of-play" and "out-of-bounds" have varying meanings, depending on the sport. For example, in football, play ends when the ball carrier steps out of the field-of-play. In baseball, however, a player can chase down a foul ball well beyond the "within-bounds" field-of-play. These distinctions are important for understanding the application of ADAAG to specific facility elements.

Another aspect of the accessible route requirement for field sports relates to ancillary facilities. For example, a community center ball field may have a relatively small number of ancillary amenities, which may include a backstop, team benches, and limited spectator seating. The ADAAG accessible route requirement might reasonably be interpreted to require an accessible route connecting the community center or parking lot to the backstop area, including team benches and spectator seating, if provided. The accessible route would not be required to penetrate the "within-bounds" field-of-play.

On the other hand, a professional baseball facility typically has extensive ancillary elements and spaces, including expansive spectator seating, concessions, team locker rooms, club house, dugouts, and other support areas. The accessible route to the field-of-play may be immensely more complex in major-league baseball facilities, requiring more specific ADAAG requirements.

b. Dugouts - Baseball stadiums include team dugouts that are partially recessed below field level (approximately 2'). The players' bench is protected by rear and side walls, and a roof overhead. This configuration provides secure team seating, good visibility for managers, and a protected vomitory so players can safely enter and exit the field. The recessed dugout floor and the low vertical profile also permit spectators to see over the roof. Located directly behind and below the dugout is a bat-swing area, which includes warm-up space for hitters, toilet rooms, and equipment storage space. The bat-swing area is further recessed (4' below dugout level) to allow adequate headroom under the spectator seats. (See Figures 1a, 1b and 1c.)

This sophisticated dugout configuration is generally unique to major-league baseball facilities. Baseball facilities for most universities, high schools, and community centers do not typically provide recessed dugouts or elaborate support facilities such as bat-swing areas and integral toilet/locker rooms. Multipurpose sports stadiums for professional teams also do not typically include recessed dugouts because the seating bowl configuration is designed for football sightlines, rather than baseball sightlines. In a football configuration, the first seating row is elevated several feet higher than for baseball. Stadiums designed exclusively for major-league baseball, however, all include recessed dugouts.

The route to the field-of-play through the dugout is used only by members of the baseball team, including players, coaches, and trainers. Baseball stadium design should provide several accessible routes connecting the lower-level concourse and the field-of-play. These routes are available to non-team personnel, such as umpires, groundskeepers, and broadcasters. These routes can also be used on those occasions when the stadium is rented for special events, such as music concerts. The dugout is a specialized facility that is not specifically addressed in ADAAG. For these unique elements, the Department of Justice Title III Technical Assistance Manual (the "Manual") (III-5.300) directs designers to apply ADAAG "to the greatest extent possible." Similar examples cited in the Manual include swimming pools, bowling alleys, and amusement park rides.

Because there are no explicit standards, reasonable interpretations of the ADA requirements must be made to determine the extent to which the guidelines may be applied. A reasonable interpretation of ADAAG is to consider the baseball field to be a "performing area" located in a place of assembly.

Stadiums may qualify as an "assembly area" in light of the following definitions set forth in ADAAG 3.5:

> **ADAAG 3.5**
> **Assembly Area.** A room or *space accommodating a group of individuals for* recreational, educational, political, social, or *amusement* purposes, or for the consumption of food and drink. (emphasis added)

In assembly areas, the following design requirements are established in ADAAG for performing areas:

> **ADAAG 4.33.5**
> **Access to Performing Areas.** *An accessible route shall connect wheelchair seating locations with performing areas, including* stages, arena floors, dressing rooms, *locker rooms, and other spaces used by performers.* (emphasis added)

The requirement to provide an "accessible route" to the dugout is also consistent with the more general ADAAG standard that follows:

> **ADAAG 4.1.1(3)**
> **Areas Used Only by Employees as Work Areas.** Areas that are used only as work areas shall be designed and constructed so that individuals with disabilities can approach, enter, and exit the areas. These guidelines do not require that any areas used only as work areas be constructed to permit maneuvering within the work area or be constructed or equipped (i.e., with racks or shelves) to be accessible.

The general definition of an "accessible route" includes the possibility of a lift being incorporated into such a route. Lifts are permitted for both interior and exterior installations. The ADAAG definition states:

> **ADAAG 3.5**
> *Accessible Route.* A continuous unobstructed path connecting all accessible elements and spaces of a building or facility. Interior accessible routes may include corridors, floors, ramps, elevators, *lifts,* and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps, and *lifts.* (emphasis added)

In another section, ADAAG restricts the use of lifts to limited conditions. Two of these conditions could apply in the case of dugouts (see (a) and (d) below).

> **ADAAG 4.1.3(5) EXCEPTION 4:**
> Platform lifts (wheelchair lifts) complying with 4.11 of this guideline and applicable state or local codes may be used in lieu of an elevator only under the following conditions:
>
> (a) *To provide an accessible route to a performing area in an assembly occupancy.*
>
> (b) To comply with the wheelchair viewing position line-of-sight and dispersion requirement of 4.33.3.
>
> (c) To provide access to incidental occupiable spaces and rooms which are not open to the general public and which house no more than five persons, including but not limited to equipment control rooms and projection booths.
>
> (d) *To provide access where* existing site constraints *or other constraints make use of a ramp or an elevator infeasible.* (emphasis added)

The use of a lift is specifically permitted by ADAAG for access to performing areas. Lifts are also permitted where "other constraints" make the use of a ramp or an elevator infeasible. The dugout arrangement could be considered a "constraint" consistent with this exception. Sightline requirements in stadiums are fundamental constraints which are not self-imposed.

The use of a lift to provide access between the bat-swing area, the dugout, and field will provide an identical route for a player or a manager with impaired mobility and his or her teammates. It is also a practical arrangement that is direct enough to be used during baseball games.

Multipurpose Use - Facilities for field sports are often used for purposes other than sports. Outdoor graduation ceremonies, half-time festivities, and other related events often occur on what would otherwise be the field-of-play. Accommodations should be provided for persons with disabilities to have equal opportunity to participate in these activities. ADAAG currently addresses issues relating to the temporary use of facilities for these types of events.

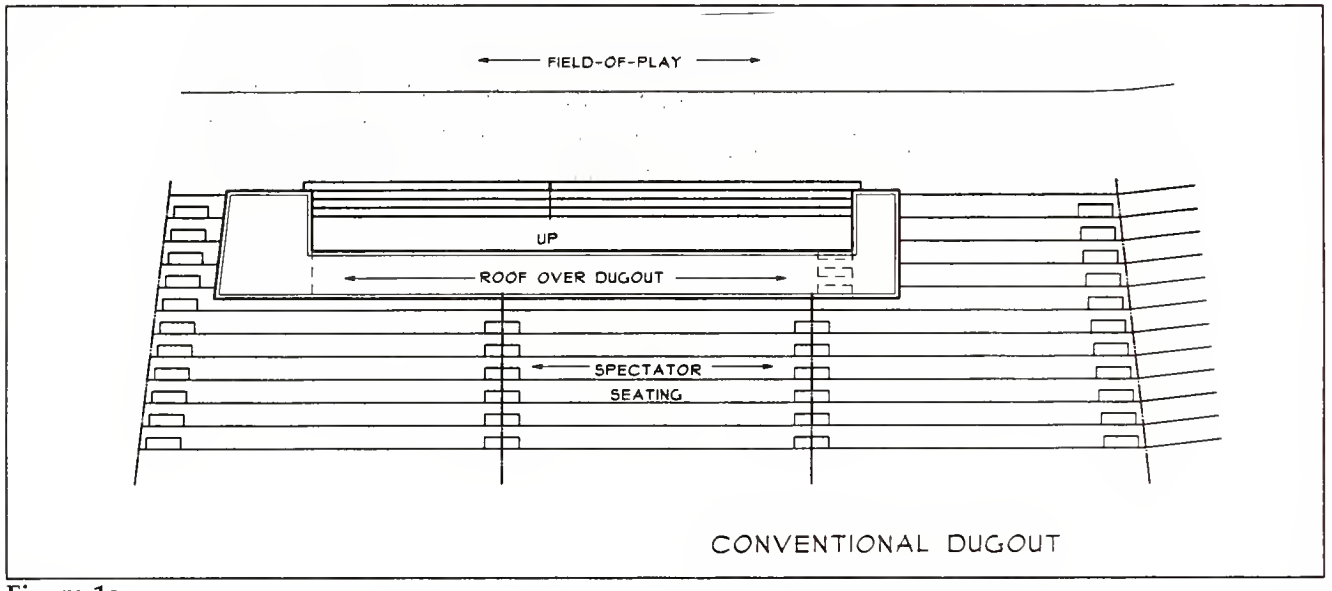

Figure 1a

Figure 1a Conventional Dugout Major-league dugouts are recessed approximately 2' below field level, and covered with a concrete roof. The dugout provides secure team seating, good visibility for managers, and a protected vomitory so players can safely enter and exit the field. The dugout is connected to support functions such as the bat-swing area, locker rooms, and storage by a short flight of steps from the rear. The dugout is recessed to allow spectators to see the field over the roof.

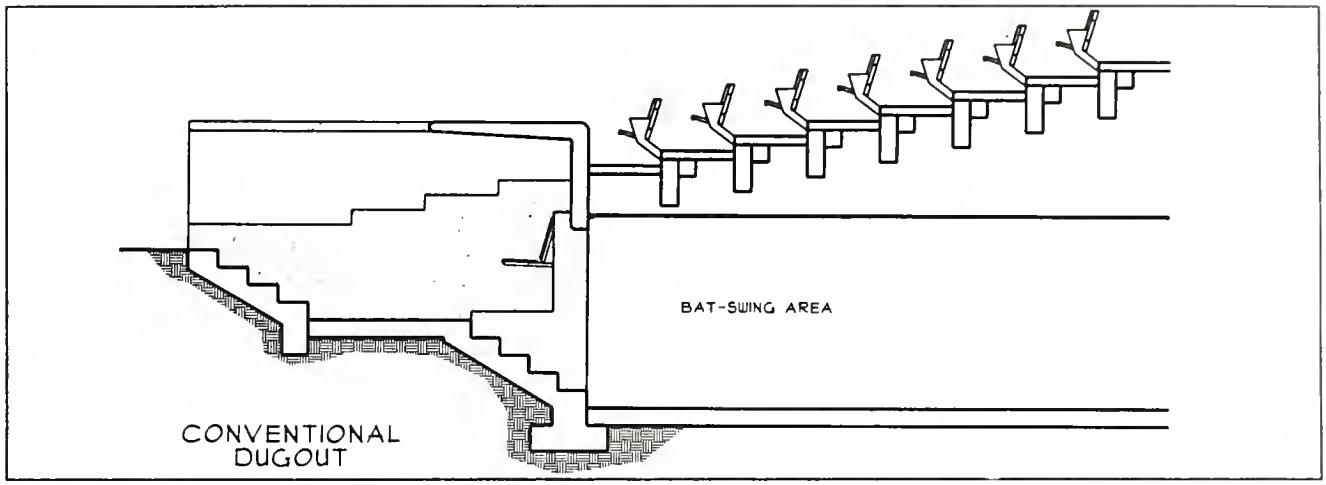

Figure 1b

Figure 1b Conventional dugouts are recessed approximately 2′ below field level. The bat-swing area is recessed an additional 4′ below the dugout to provide sufficient headroom. The configuration of the bat-swing area must provide players with direct visual access to the dugout and the field so that the batters can communicate with the coaches and monitor the game's progress.

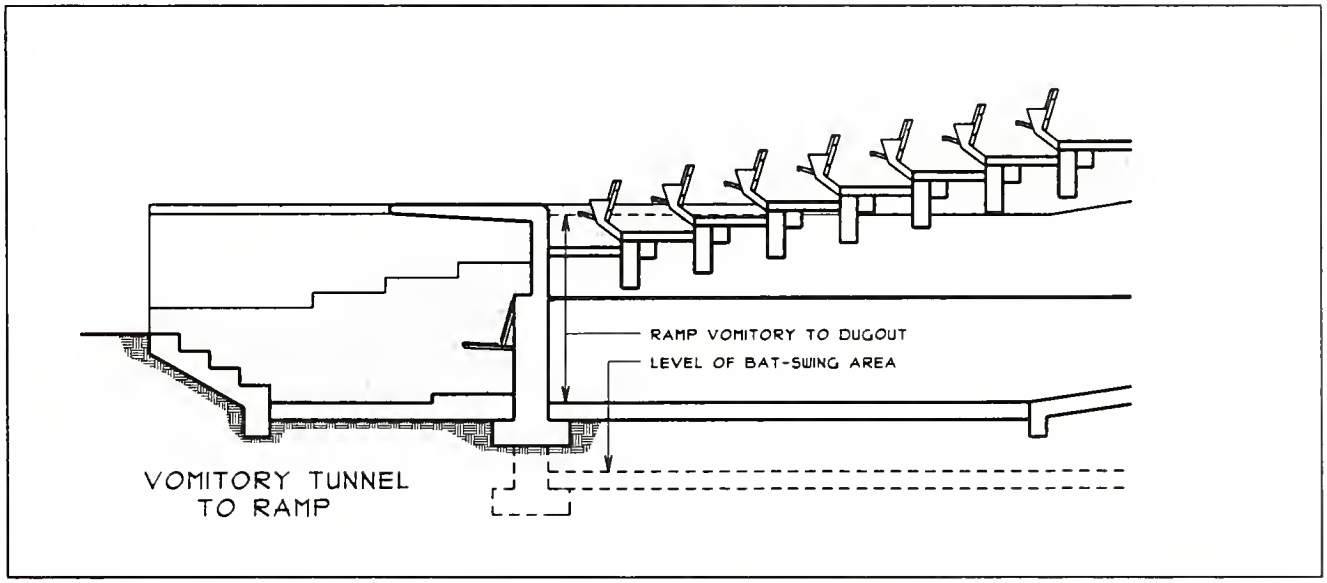

Figure 1c

Figure 1c A ramp can be used to provide wheelchair access to the dugout, but a covered vomitory must be cut through the spectator seating above. A second ramp must be constructed to provide access to the bat-swing area. A third ramp is necessary to provide access to the field. This solution technically complies with ADA, but does not provide practical access that is consistent with the use of these spaces.

2. Summary Matrix: FIELD SPORT FACILITIES

Element	Use	Issue	Comments
SURFACING			
Natural grass turf	Field-of-play	Accessible route	Integral part of field-of-play.
Sand/soil	Baseball/ softball	Accessible route	If non-sporting events, such as medal ceremonies or entertainment, occur within the field-of-play, is temporary access mandatory, and what should the criteria be?
Artificial Turf	Field-of-play	Accessible route	Somewhat accessible. Since it is an integral part of the field-of-play, no changes are recommended.
BOUNDARY SIDELINES			
Natural grass turf	Field sports facilities	Accessible route	Safety of sports participants should take priority over accessibility to areas directly adjacent to the field-of-play and the field-of-play items. Designated key accessible route locations could be safely incorporated into sideline areas. Temporary/removable platforms may need to be provided to allow access to the field-of-play so as to achieve a balance between safety and accessibility.
Sand/soil	Baseball/ softball	Accessible route	Inherent material characteristics do not meet requirements for accessible ground and floor surfaces.
Artificial turf	Varies	Accessible route	Somewhat accessible.

2. Summary Matrix (continued): FIELD SPORT FACILITIES

Element	Use	Issue	Comments
ANCILLARY SPACES AND ELEMENTS			
Dugout	Baseball	Accessible route/seating	Mostly confined to major-league and some minor-league baseball facilities. Ramp systems are problematic. Platform lift solution.
Safety barriers	Edge conditions/ boundary	Accessible route	Designed to absorb impact by athletes. Gates and entrances often padded; may not meet strict access requirements.
Security elements		Accessible route, hardware	Accessibility of security hardware.
Staging area		Accessible route	Accessible route should connect staging areas with field-of-play.

3. Existing/Proposed ADAAG Changes

EXISTING: (none)

PROPOSED: Field-of-play. The performing area in a sports facility.

Rationale: This definition is necessary in order to clarify the application of ADAAG. The field-of-play would be equivalent to a performing area in other assembly occupancies, such as the stage in a theater.

Court Sports

1. Issues. Court sports typically use a relatively hard surface as the field-of-play. Exceptions to this characteristic include grass or clay tennis courts and sand volleyball courts. The field-of-play is clearly defined by boundary lines or physical barriers. Court sports include, but are not limited to the following:

- badminton
- racquetball
- basketball
- squash
- handball
- team handball
- indoor football
- tennis
- indoor soccer
- volleyball
- jai alai
- walleyball

Hard surfacing typically used for court activities generally meets the ADAAG requirements for a firm, stable, and slip-resistant surface. The provision of an accessible route to and around courts, though not as problematic as the provision of accessible routes for field sports, presents some unique challenges. For example, handball, racquetball, and squash courts have historically been designed to have small, narrow entrances. The subcommittee's analysis indicates that this is a self-imposed design constraint that can be significantly improved in order to increase recreational opportunities for persons with disabilities. These and other unique features associated with court sports are covered under the following subheadings:

a. Accessible Route - Current ADAAG requirements for accessible routes to court facilities are sufficient to cover most of these facilities. Exceptions include court sports such as sand court volleyball, badminton on grass, and tennis on natural-surface courts, such

as those of grass or clay. As in the case of field sports, an accessible route of travel to the field-of-play should be required.

Changes in level that occur at the transition to field-of-play wood floors should meet existing ADAAG provisions for accessible routes. These types of floor level changes are not inherent characteristics of a particular court sport. Eliminating any such level changes would not affect the nature of the sport.

b. Entry Doors - Handball, racquetball, and squash courts have traditionally been designed to be accessed through small, narrow doors, with recessed hardware. These design characteristics are the result of a conscious effort to minimize the wall penetrations in an otherwise totally enclosed, hard-surfaced space. Walls, ceilings, and floor are all considered a part of the field-of-play. More recently, the design trend has been to create a glass wall with an entrance, supported by perpendicular glass mullions. This feature allows for enhanced spectator views of the sporting event and creates a more exciting and dynamic space. Doors typically swing into the court. If the door opens out, the proximity of the structural mullion on either side of the door jamb interferes with the required 18" minimum strike side clearance for wheelchair maneuverability. This obstruction may be eliminated by changing the door to swing into the court.

Generally, entrance doors to most court facilities are adequately covered by ADAAG. Gates and chain-link type entrances may need to be addressed, particularly the hardware used to open, close, and secure the entrance. Existing hardware that does not require tight grasping, pinching, or twisting of the wrist should be acceptable.

c. Ancillary Facilities - Certain court sports such as tennis and volleyball have facilities that are provided for judges or other officials to view the field-of-play. Typically, the official at the net is seated in an elevated seat. This element is considered chattel, and coverage by ADAAG is therefore questionable. Furthermore, these seats, by definition, are non-occupiable spaces, and access to them is usually through the use of ladders. ADA's Title I regulations would require a reasonable accommodation for an official with a mobility impairment who is otherwise qualified to perform officiating duties.

2. Summary Matrix: COURT SPORT FACILITIES

Element	Use	Issue	Comments
Doors	Handball, squash, racquetball	Usable, accessible route	Small, narrow doors are traditionally used. Insufficient maneuvering space is self-imposed; a viable solution that meets existing ADAAG requirements is possible.
Hardware	Handball, squash, racquetball	Accessibility, usability	Flush/recessed hardware is difficult to grasp and operate. Development of accessible hardware that meets existing ADAAG requirements is necessary.
Gates/hardware	Tennis, other similar	Accessibility, usability	Chain-link type fencing with gates equipped with latches.
Official's platform/seat	Volleyball, tennis	Accessibility, usability	Elevated seats for officials are considered chattel and are non-occupiable space accessed only by ladder: Title I issue.
Floor level changes at transition to court floors	Handball, squash, racquetball	Accessible route	Floor level changes that may occur at transition into courts are covered under existing ADAAG requirements for accessible route.

3. Existing/Proposed ADAAG Changes

EXISTING: (none)

PROPOSED: (none)

Rink Sports

1. Issues. Rink sports are those sports activities that are performed on a field-of-play that includes ice or other hard smooth surfaces for purposes of skating. These facilities include, but are not limited to the following sports:

- curling
- roller skating
- ice hockey
- sledge hockey
- ice skating
- speed skating - short track
- rollerblading
- speed skating - long track

For persons with disabilities, particularly those with mobility impairments, access to the rink floor poses the greatest challenge. All other aspects of rink facilities are adequately covered in ADAAG. While the subcommittee found little information on the use of roller skating rinks by persons with severe mobility impairments, ice skating facilities have responded to a growing interest in sledge hockey. Played in a typical ice hockey/rink facility, the sport involves the use of custom-made sleds for individuals with severe mobility impairments. The game is designed specifically for those who are amputees, have post-polio syndrome, are paralyzed,

or have degenerative hip or knee problems. Popular in Europe and Canada, sledge hockey is gaining prominence in the United States. Slight modifications are required to ice skating or hockey facilities to accommodate the sport. The following section identifies various elements and spaces associated with rink facilities that may require new or revised design guidelines:

a. Accessible Route - The "field-of-play" for both ice and roller skating rinks is surrounded by barriers with limited penetrations to allow skaters/players, as well as maintenance equipment, to enter and exit. Some speed skating tracks surround ice hockey rinks. In this case, access to the hockey field is across the skating tracks. These and other entry points should be connected by an accessible route.

b. Gates/Doors - Providing an accessible route onto the rink surface, particularly for ice skating or hockey, is problematic. Unlike roller skating surfaces which are fixed, the level of an ice skating surface fluctuates. A metal band contains the ice at the perimeter and acts as a guide for the zamboni, and also as a stop for skaters as they approach the exit from the ice. An exemption for this feature should be considered in ADAAG. The ADAAG requirement for a minimum clear door opening width of 32" can be accommodated at gates, doorways, and other points of entry into the rink.

c. Hardware - For most public skating facilities, points of entry into the rink do not require the operation of a door or gate. When doors or gates are provided, they typically remain in the open position and are closed when the skating surface is being maintained. In ice hockey, these entry points remain closed to the public and are used by athletes and staff. Hardware is mounted on the surface of the door or gate opposite the competition side for the safety of players. A person in a wheelchair may be unable to reach over the gate or door to operate the hardware. Currently, ADAAG does not require the installation of door hardware where none exists. Any hardware on the competition side of gates or doors would pose a significant hazard to all players.

d. Athlete Seating Area - Hockey teams have designated players' boxes and penalty boxes for athletes during a game. The players' box is typically raised approximately 8" from the surface of the ice. There appears to be no absolute requirement for this dimension other than it is the typical height of a riser used for steps. To accommodate sledge hockey, this dimension should be reduced to approximately 4". Removable benches and 32" clear doorways should otherwise accommodate this emerging sport for disabled athletes. Similar requirements should be specified for the penalty box area.

e. Surfaces - Floor surfaces for the field-of-play should be exempt from any ADAAG requirement regarding slip resistance or cross slope, and from any other provision that would alter the fundamental nature of the sport.

f. Temporary Events - When an event that does not utilize the ice surface of a rink, such as a medal ceremony, occurs within the rink, a temporary accessible route onto the ice can be provided. Temporary features or elements are covered by existing ADAAG provisions.

2. Summary Matrix: RINK SPORT FACILITIES

Element	Use	Issue	Comments
Ice	Field-of-play	Not accessible	Inherent characteristic of the material cannot be changed to meet ADAAG requirements. Accessible routes can be provided at temporary events expediently and inexpensively by the use of carpet, rubber mats, and the like.
Protective rubber mesh/hard rubber	Ancillary	Uneven and soft, somewhat accessible	Serve to protect skates and skaters, allows drainage of melted ice away from the walking surface. Hard rubber surfaces usually have reduced slip resistance due to standing water - meets ADAAG when dry.
Transition to rink	Hockey, Skating, Recreation	Access to rink, not accessible	A step resulting from the thickness of the ice is common. It is extremely difficult to eliminate this step because ice thickness varies as much as 1 or 2 inches. A removable ramp, if provided, would need to be hinged to accommodate the variation in ice thickness. A step is provided at the transition to the ice for the safety of ice users. A strong transition to the ice is desirable.
Staging areas	Benches, penalty box, judges', officials' areas	Access	(For accessibility to the ice, see above.) Access to these areas from within the facility is covered by ADAAG.
Guardrail, gate	Boundary	Not accessible	Door opening force may not meet ADAAG due to the heavy weight of these "gates" that are designed to take the impact of skaters. ADAAG-compliant gates may jeopardize the safety of players. Door/gate hardware is not provided on the competition side for safety reasons. Hardware on the opposite side may not be usable by persons in wheelchairs. Installing ADAAG-compliant hardware on the competition side would jeopardize the safety of players.

3. Existing/Proposed ADAAG Changes

SCOPE

EXISTING: 4.1.2(4) Ground surfaces along accessible routes and in accessible spaces shall comply with 4.5.

PROPOSED: 4.1.2(4) Ground surfaces along accessible routes and in accessible spaces shall comply with 4.5.

EXCEPTION: Field-of-play in sports facilities during play where inherent characteristics of the playing field surface do not meet 4.5, including but not limited to ice rinks, sand courts, and grass courts.

Rationale: Requiring special surfaces found in sports venues to meet ADAAG requirement for "stable, firm, slip-resistant" surfaces would fundamentally alter the nature of some sports or would eliminate a sport altogether.

Aquatic Facilities/Natatoria

1. Issues. Aquatic facilities provide opportunities for individuals to recreate, exercise, and compete in water sports. Activities such as swimming, diving, water polo, and aqua aerobics are typically facilitated through the use of pool tanks and similar structured elements and spaces. The following aquatic facilities are studied in this section:

- competition pools
- public pools
- diving pools
- therapy pools
- lap pools
- wading pools
- leisure pools
- whirlpools/spas
- natatoria

The above-referenced aquatic facilities, unlike natural settings such as lakes, ponds, streams, beaches, and other outdoor amenities, are highly developed spaces with complex mechanical, electrical, and plumbing systems and equipment. As a result, providing accessibility for persons with disabilities is more easily achievable, especially when the design requirements are established early in the design process. ADAAG currently requires accessibility into and throughout new facilities. Access into the pool tank is the primary issue.

Access into the pool, for persons with mobility impairments, presents a range of challenging issues because of the diverse needs of this group of users. The subcommittee concludes that the best solution for access into the pool is to provide a range of alternatives, recognizing that no one solution satisfies all needs. These solutions range from fixed elements such as steps and ramps, to portable equipment such as transfer tiers, lifts, and other similar devices. An overriding objective in providing alternative methods for entering and exiting the pool is to allow persons with disabilities to use the facilities independently and in a dignified manner.

The following section addresses elements and spaces within aquatic facilities that require new or expanded design guidelines:

a. Ramps - Ramps into swimming pools constitute one of many alternatives that permit someone with a mobility impairment to enter and exit the pool. There are, however, some misconceptions about pool ramps. The basic intent of the ramp is to allow someone who uses a wheelchair to roll into and out of the pool. However, standard wheelchairs are not designed for underwater use and health department regulations would probably prohibit their use in the pool. In addition, resistance inherent in moving in water increases the challenge of exiting via a ramp. The buoyancy of the swimmer using a wheelchair is also a factor.

In therapeutic settings, a special pool chair is typically used to transport an individual down the ramp and into the water. Most pool chairs are not designed for independent use. How then, are pool ramps used in public settings? While pool ramps are sometimes used by individuals who have access to pool chairs, anecdotal evidence suggests that a much broader range of people use this amenity. For example, beginner swim classes often use a pool ramp, if broad enough, to acclimate new students to the water and teach basic techniques in the shallow areas of the ramp. Adult classes such as water aerobics for elderly people, use the ramp to gain access to the shallow end, especially for those who

have limited mobility. Other wheelchair users will dismount from their chair and ease themselves down the ramp to gain access. The process is reversed when exiting the pool.

Most building codes do not currently require permanent ramps into pools. This amenity is often found in large community facilities that recognize its multipurpose use. The minimal economic impact of a permanent ramp in large pool facilities is also a factor.

b. Stairs - A stairway into the pool, used alone or in conjunction with a transfer tier located on the adjacent deck surface is another alternative to permit someone with a mobility impairment to enter and exit the pool. Like ramps, stairs are often used by young children to acclimate themselves to the water or remain at a comfortable depth above the shallow end floor. They also accommodate elderly people or others with ambulatory mobility impairments to gain access into the water.

Transfer tiers extend the stair tread-riser configuration to a transfer surface above the pool deck, permitting someone to transfer from a wheelchair to that surface, then ease him/herself down to and into the water, one tread at a time. Transfer tiers can be either permanent or movable, though the latter may be preferred in multipurpose pools so as to not obstruct access to the stairs for ambulatory persons, as long as the tier could be used independently by persons with disabilities at any and all times. For wheelchair users, stair/transfer tier access requires a degree of upper body strength that not all people with disabilities have.

The tread and riser dimensional requirements of ADAAG may be sufficient for staired pool access, though a 7-in. riser may be difficult for a wheelchair user moving up or down a stair/transfer tier. Handrails may not be necessary on both sides of the stair and transfer tier, and handrail extensions would be unnecessary at the bottom (there is no tripping/falling risk in the water) and impossible at the top (as they would obstruct transferring from a wheelchair). ADAAG handrail heights would also be impractical for wheelchair users, as they are specified for persons standing, not sitting on the stair treads.

c. Lifts - Lifts that ease someone into or out of the water are yet another option to provide access into or out of a pool. They can be permanently installed, placed in a deck mounting when needed, or rolled into place. Many are operated by someone other than the lift user, and the resulting lack of independent access is a drawback. However, for persons who lack sufficient upper body strength to use a transfer tier, and where the size of the pool precludes a ramp, a lift may be the only practical way to get into the water.

The wide variety of pool lifts currently on the market (molded plastic seats vs. cloth slings, independent vs. attendant/assisted operation) complicates the decision on whether lifts can be an accessible means of getting into and out of the water. Further research on these devices may be warranted.

d. Movable Floors - Movable pool floors can provide improved access for people with mobility impairments, allowing someone to step or transfer to the floor from the deck, then lowering to the level necessary for the pool activity.

The consensus of the subcommittee is that one accessible means of getting in and out of pools should be required by ADAAG. To require a specific feature, such as a ramp, lift, or transfer tier, however, may limit the use of a particular aquatic facility depending on its usage. For example, a pool open to the general public primarily for recreational purposes is used differently than a lap pool or diving pool used by athletes. Moreover, the capabilities of persons with disabilities using various aquatic facilities would vary greatly from facility to facility.

In order to maintain maximum flexibility and require accessibility into pools, the subcommittee concluded that accessible means of access into pools should be facility-specific, as long as one of the three choices are utilized. It is also strongly recommended that any ADAAG requirement for access into pools be accompanied by detailed appendix information describing the usage of each feature, the varying capabilities of persons with disabilities, and the appropriateness of each feature in accommodating persons with varying capabilities.

2. Summary Matrix: AQUATIC FACILITIES/NATATORIA

Element	Use	Issue	Comments
Ramps	Enter water	Accessible route	Typically not used independently by wheelchair user (use of pool chair).
		Slope	Buoyancy factor and assistance in pool char may permit steeper slopes, while size of 36 in. wide, 1:12 ramp (and landings) may preclude use in smaller pools.
Stairs/transfer tier	Entering water	Accessible route	Stairs not currently recognized as a component of an accessible route.
		Tread/riser dimensions	7-in. maximum riser may be too high to facilitate use by wheelchair users.
		Handrails	ADAAG height requirements too high for someone seated on tread; handrail extension at top of transfer tier would obstruct transfer from wheelchair; may not be necessary on both sides; continuous handrail requirement precludes use of movable transfer tier.
Pool Lifts	Entering water	Accessible route	No accessibility criteria established; may require attendant assistance.

3. Existing/Proposed ADAAG Changes

SCOPE

EXISTING: (none)

PROPOSED: 4.1.3 Recreational Facilities.

4.1.3 Aquatic Facilities/Natatoria

EXISTING: (none)

PROPOSED: 4.1.3 Swimming Pools. If swimming pools are provided, then each swimming pool shall comply with 4.zz.

TECHNICAL REQUIREMENTS

EXISTING: (none)

PROPOSED: 4.zz Swimming Pools.

4.zz.1 General. Accessible swimming pools shall comply with 4.zz.

EXISTING: (none)

PROPOSED: 4.zz.2 Water Entry. Means to provide water entry shall be on an accessible route and shall include ramps, lifts, or combination stairs-transfer tiers. At least one means of water entry shall be provided for each accessible swimming pool.

Rationale: Requiring an "accessible route" into the water is not appropriate because stairs and staired transfer tiers cannot meet the "accessible route" definition. Additionally, many pool lifts do not permit the "unassisted operation" ADAAG specifies for wheelchair/platform lifts, and the guidelines should be consistent in what they define as accessible.

Where pool water surface area or pool user capacity exceeds a certain number, two means should be required. Further research is necessary to develop the scoping criteria.

EXISTING: (none)

PROPOSED: 4.zz.3 Ramps. Ramps provided for water entry shall conform to 4.8, except that:

4.zz.3(1) ramps shall not be limited to 30 in. in maximum vertical rise.

Rationale: Most state codes require multipurpose pool tank depths to be a minimum of 3'-6" (42") (shallow end).

EXISTING: (none)

PROPOSED: 4.zz.3(2) handrails shall not be required to extend beyond the base of stairs or the base of a ramp where such would protrude into a lane or otherwise programmable area.

Rationale: Handrails present a hazard.

EXISTING: (none)

PROPOSED: 4.zz.4 Pool Lifts (Reserved)

Rationale: Pool lifts would meet the ADAAG requirement for means of water entry, but technical specifications for accessible pool lifts are reserved pending further study.

EXISTING: (none)

PROPOSED: 4.zz.5 Stairs and Transfer Tiers. Stairs provided for water entry shall extend from the deck edge to the pool floor and shall comply with ADAAG 4.9, except:

4.zz.5(1) risers shall be permitted to be vertical and without angled nosings.

Rationale: Pool construction practices preclude nosing.

EXISTING: (none)

PROPOSED: 4.zz.5(2) one handrail shall be permitted on either side of the stairs or within the stairs where a minimum 22-in. stair tread width is maintained.

Rationale: Many pool stairs do not have "sides" on which to install handrails, and support is not as critical due to buoyancy. The 22 in. provides adequate passage width.

EXISTING: (none)

PROPOSED: 4.zz.5(3) handrails shall be provided at a height of 17 in. to 19 in. in addition to the requirement of ADAAG 4.9.4(5).

Rationale: This accommodates persons sitting on the treads while transferring into or out of the water.

EXISTING: (none)

PROPOSED: 4.zz.5(4) handrails shall not be required to extend beyond the base of stairs or the base of a ramp where such would protrude into a lane or otherwise programmable area.

Rationale: Handrails present a hazard.

EXISTING: (none)

PROPOSED: 4.zz.5(5) a permanent or movable transfer tier that extends the stair tread/riser configuration to a level 17 in. to 19 in. above the pool deck shall be provided.

Rationale: Continuity of the stair tread/riser geometry should assist in moving the transfer tier up and down.

EXISTING: (none)

PROPOSED: 4.zz.5(6) one handrail in conformance with 4.zz.5(3) shall be provided on one side of the treads/risers.

Rationale: Two handrails (with extensions) rather than one would obstruct transfer to the transfer surface by a wheelchair user.

EXISTING: (none)

PROPOSED: 4.zz.5(7) transfer tiers shall provide treads and a top transfer surface that has a minimum depth of 36 in. and a minimum width of 24 in.

Rationale: 24-in. minimum is derived from the existing ADAAG 4.35.4 bench requirement.

Indoor Multipurpose Facilities

1. Facilities

- aerobic studios
- gymnasia
- ballet
- gymnastics
- dance
- martial arts
- fitness centers
- wrestling

a. Fitness Centers. Fitness centers typically may include any combination of cardiovascular training/exercise equipment, weight training equipment, and free-weight training equipment used for bodybuilding, muscular development, and general conditioning. Such fitness centers may be organized, arranged, and separated by equipment type.

Accessible Route - Floor surfaces at fitness centers generally meet ADAAG requirements. Exceptions include the soft exercise mats and raised mats used during therapy and instruction. These mats should not be required to meet ADAAG for firm, slip-resistant surfaces due to their innate characteristics and the safety functions for which they were intended. Floor mats and the like are not an integral part of a structure, nor are they "built-in," and to require their coverage in ADAAG would be inappropriate.

Exercise machines and equipment can be arranged within a room so as to provide accessible routes to and around these machines. Portions or parts of exercise machines may be considered objects protruding into an accessible route and may pose a hazard to persons with visual impairments. It is most likely, however, that individuals with visual impairments would knowingly enter an exercise environment with an awareness of the hazard that the machines and equipment pose. Special equipment rooms should be exempt from ADAAG 4.4 for Protruding Objects.

Free Weights and Weight Machines - Areas of fitness centers that house free weights and weight-lifting/power-lifting equipment are designed to accommodate their special design and use. Lifting platforms are used to cushion the impact of dropped free weights, and adjustable-height racks are used during training to minimize stress and injury. The subcommittee discussed conventional wheelchair design, which does not allow users to lift free weights while seated in the wheelchair because the conventional wheelchair is not engineered to accommodate the weight of both the user and the weights. If it is otherwise determined that access up to the lifting platforms is required, a ramp could be integrated into the design. Because the platforms are usually raised no more than 6" off the floor, handrails would not be required at these ramps.

Many wheelchair users utilize weight training machines while seated in their wheelchairs. Most of the machines are adaptable for use with or without integral seats and can be used by persons with or without disabilities. Most weight machines are free-standing equipment, so their design would not be covered by ADAAG. However, some machines are mechanically fastened to floors, walls, or ceilings, and thus could become "built-in" features. ADAAG does stipulate scoping and technical requirements for "fixed or built-in" elements, such as storage and seating. Although many weight machines already meet ADAAG requirements for reach ranges, those that do not would be difficult to alter without changing the fundamental nature of the activity for which the machines were intended.

Summary Matrix: FITNESS CENTERS			
Element	Use	Issue	Comments
Floor area	Provides an array of equipment and activities	Accessible route	Surface and width of accessible route consistent with ADAAG. Protruding objects may be problematic: some machines have bars or hanging devices that may injure someone with a visual impairment.
Floor surfaces	To enhance and facilitate exercise	Surfaces will vary	Floor surface condition typically not a problem. Exceptions include soft exercise mats, and raised mats for therapy and instruction.
Raised platforms	Built-up, impact-absorbing flooring	Accessible route/safety	Particularly in weight lifting (free weights), individual platforms are provided as a station for each lifter. The platform protects the otherwise typical floor surface (alternative accommodations can be explored).
Equipment	Range of exercise	Reach ranges/ controls	Accessible equipment probably falls outside the scope of this committee. A question is whether bolted-down equipment is considered built-in.
Mirrors	Allows self-monitoring of performance/ form	Mounting height	Mirrors are typically full-height for full-body view. Standard design practice suggests that mirrors, utilized in rooms where free weights are present, be mounted a minimum of 18" above finished floor.
Signage	Instructional/ directional	Communication	ADAAG applies.

b. Gymnasia. Gymnasia are multipurpose facilities that can be used for one or more of the following:

- basketball
- volleyball
- fencing
- wrestling
- gymnastics

Specific requirements for volleyball, basketball, and other court sports are discussed separately. Other sports, such as wrestling and gymnastics, utilize facilities where equipment and mats are set up to hold multiple events simultaneously.

Accessible Route - The polished wood or synthetic surfaces in a gymnasium may not meet the ADAAG requirement for slip-resistant surfaces on accessible routes. The finished floor surfaces found in gymnasia, however, are inherent to these facilities, and changing the finish of these floor surfaces would alter the fundamental character of gymnasia. Moreover, slip-resistance of gymnasium floors does not impact the ability of wheelchair users to utilize gymnasia. For example, a wheelchair basketball game is played on the same surface as other basketball games without diminishing the performance of the players, utilizing the same rules of play for NCAA basketball.

Floor mats are used extensively during wrestling and gymnastics. These mats do not meet ADAAG requirements for firm and slip-resistant surfaces, and should be exempt from the ADAAG requirement. Changing these mats would alter their fundamental purpose of protection and safety of athletes. Accessible routes, nevertheless, should be provided to floor mats.

Gymnastics Equipment - The equipment itself should be exempt from meeting any ADAAG requirements, particularly those for reach ranges and protruding objects, because compliance would alter the fundamental nature of the apparatus and thus the activity. Floor conditions during practice and competition vary for gymnastics. During practice, built-up padding is provided under, on, and around various equipment to protect athletes from injury, raising the level on equipment. During competition, these heavy paddings and mats are removed, lowering the floor level under the apparatus. Paddings are not built in or affixed to the structure, and their height can be easily adjusted. In both situations, accessible routes should only be provided to and around the padded areas.

All other elements that are not an integral part of the sport, such as drinking fountains, cuspidors, locker rooms, accessible routes between locker rooms, and spectator seating, should comply with ADAAG. No significant compliance issues are foreseen for these elements.

Summary Matrix: GYMNASIA

Element	Use	Issue	Comments
Surfaces	Polished, woods	Slipperiness	Nature of field-of-play material takes precedence over surface treatment.
	Artificial/synthetic		
Multilevel	Unusual in large rooms.	Accessibility	Covered by ADAAG.
Suspended mezzanine tracks	Tracks may be suspended within the gymnasium.	Accessibility	Remodeling in numerous facilities will be impractical. The cost of an elevator to serve a suspended track will almost equal the cost of the track. Stairs serving such tracks should meet ADAAG.
Controls	Events for nets, apparatus, etc.	Usability	Access to controls covered by ADAAG.
	Movable walks		Use of some manual controls is difficult even if positioned correctly.
			Electric and electronic controls probably usable.
Cuspidors, water fountains	Traditionally recessed for safety.	Usability	Certain water fountain criteria could probably be applied to cuspidors.

c. Multipurpose Studios. Multipurpose studios are used for a variety of activities, including the following:

- aerobics
- martial arts
- ballet
- tumbling
- dance
- wrestling

Accessible Route - Depending on the type of activity, temporary built-up platforms are used in indoor multipurpose studios. These temporary features may be covered by ADAAG. Accessible routes should also be provided to any special equipment, portable or "built-in," such as climbing walls and peg walls, and mats used for tumbling, wrestling, and the like.

Accessibility of Equipment - Equipment that are not built-in should not be covered by ADAAG. Those equipment that are built-in should meet ADAAG to the extent that doing so does not alter the fundamental nature of the activity for which they were intended. For example, to provide an accessible route similar to the path of travel over a climbing wall by the use of an ADAAG compliant means, such as a ramp or an elevator, would be impractical. It would also alter the fundamental nature of climbing and physical conditioning for which the wall was intended.

Communication - Assistive listening systems (ALS) should be provided in areas where instruction-oriented activities, such as aerobics and dance, occur. Permanently installed systems may be necessary in order to ensure full access to these programs by persons with hearing impairments. (For system descriptions, see Assistive listening systems under Common Elements & Systems.)

Summary Matrix: MULTIPURPOSE STUDIOS

Element	Use	Issue	Comments
Floor surfaces	Varied to accommodate range of activities	Accessible route	In most instances, ADAAG applies. Exception for mats. Many flooring systems are built-up accommodations must be made to overcome any transition. Such floor systems will most likely be recessed.
Communication systems	Activities such as aerobics, other instruction-oriented activities	Auxiliary aids and services for hearing- and sight-impaired	Some built-in systems may be appropriate to ensure full access for persons with disabilities.
Platforms	Instruction	Step-up/raised	Usually a portable feature not required to be covered by ADAAG.
Signage	Communication	Visually impaired	Covered by ADAAG.
Mirrors	Visual access		Typically full height.
Equipment	Varies	Reach ranges/ controls	Unless built-in, not covered in ADAAG.
Climbing walls/ peg walls	Climbing/ Coordination skills	Access, route, and features	Accessible route to be provided to the activity area.

d. Saunas and Steam Rooms. Access into saunas and steam rooms is adequately addressed by the existing ADAAG requirements. In saunas, wooden ductboards are provided for user comfort; wood being a poor conductor of heat. Simply laying wood over a ceramic tile, concrete, or other substrate would not be appropriate given moisture content. Therefore, ductboards are utilized which, like pallets, allow for air circulation below the wood. They are usually removable for maintenance. If ductboards are provided/incorporated, the level change must be addressed, perhaps by recessing the slab substrate.

Wheelchair access into saunas and steam rooms may be easily accomplished, but the hot environment in such spaces makes it inherently unsafe to remain there in a wheelchair constructed of a metal or heat-sensitive material for an extended length of time. Also, most wheelchair users will not wish to subject their wheelchairs to the dampness of a steam room. Accordingly, a clear floor space adjacent to a 17-in. to 19-in. high bench is necessary to permit a wheelchair user to transfer to the bench, at which time the wheelchair would most likely have to be removed. Obviously, someone would also have to bring the chair back into the room when the user wished to end his/her time in the sauna/steam room.

Because this condition precludes independent exit by a wheelchair user, a signalling device/call system must be provided in accessible saunas/steam rooms to permit a wheelchair user to indicate he/she needs to leave the room. The activating switch, button or intercom must be located next to the accessible bench within ADAAG reach ranges. Such a device will also provide a greater level of safety for other users without disabilities.

The subcommittee recommends that further research be conducted to determine more accurate and specific design requirements for saunas and steam rooms.

Summary Matrix: SAUNAS AND STEAM ROOMS			
Element	Use	Issue	Comments
Doors	Entry	Accessible route	Threshold, hardware, and clear opening consistent with ADAAG; opening force may be an issue.
Bench		Height	Height and structural integrity should be the same as ADAAG 4.35.4 (dressing room benches), and provide back support.
		Clear floor space	Necessary adjacent to accessible bench to facilitate transfer from wheelchair; remaining in a wheelchair in a sauna/steam room for an extended time will heat chair's metal components, may cause burns to both wheelchair user and others.
Signalling device	Safety, exiting		Allows user to signal when he/she wishes to leave; also serves as emergency call device should person need to be removed due to excessive heat exposure.
Floor	Sloped to drain	Cross slope	Not consistent with current ADAAG; exemption?
Ductboards	Serve as comfortable flooring finish for user	Spaced to allow air flow (like a boardwalk); concern regarding direction of slots	Not consistent with current ADAAG.

2. Existing/Proposed ADAAG Changes

SCOPE

EXISTING: (none)

PROPOSED: 4.1.3 Saunas and Steam Rooms. If saunas or steam rooms are provided, then each public and common-use sauna and steam room shall comply with 4.yy.

Rationale: Saunas and steam rooms may be located in spaces other than locker rooms, and are thus listed as separate elements.

TECHNICAL REQUIREMENTS

EXISTING: (none)

PROPOSED: 4.yy Saunas and Steam Rooms.

4.yy.1 General. Saunas and steam rooms required to be accessible by 4.1 shall comply with 4.yy, and shall be on an accessible route.

Rationale: The subcommittee recommends that saunas and steam rooms should be accessible. However, further research is required to develop more detailed requirements for accessible design.

EXISTING: (none)

PROPOSED: 4.yy.2 Doors. Doors to accessible saunas and steam rooms shall comply with 4.13.

EXISTING: (none)

PROPOSED: 4.yy.3 Clear Floor Space. Clear floor space shall be provided at accessible benches and controls.

Rationale: Clear floor space is located next to the accessible bench in order to allow a wheelchair user to transfer to the bench. The wheelchair is then removed to protect it from moisture, and to prevent its metal components from heating to a temperature that could cause burns.

EXISTING: (none)

PROPOSED: 4.yy.5 Bench. Every accessible sauna or steam room shall have a bench or bench section mounted 17 in. to 19 in. above the finished floor or deck. Clear floor space shall be provided adjacent to the bench to allow a person using a wheelchair to make a parallel transfer onto the bench. The structural strength of the bench and attachments shall comply with 4.26.3. The bench shall have a slip-resistant surface.

Rationale: A wheelchair user, or other person with a mobility impairment, will most likely transfer to the bench seat.

EXISTING: (none)

PROPOSED: 4.yy.6 Signalling Device. An audible signalling device between the sauna or steam room and a point outside the sauna or steam room shall be provided to permit a sauna/steam room user to indicate a need to exit the room. The operating mechanism of the device shall comply with ADAAG sections 4.27.3 and 4.27.4 and shall be located immediately adjacent to the accessible bench or bench section.

Rationale: Because wheelchairs will typically be removed from the sauna/steam room, a signalling device is essential for the wheelchair user to be able to call for his/her wheelchair and leave the room. It will also serve ambulatory disabled and non-disabled users who may need assistance if staying in the sauna/steam room causes light-headedness or cardiac stress.

Other Facilities

1. Facilities

- bowling centers
- velodromes
- boxing facilities
- indoor track
- horse racing facilities

2. Summary Matrices

a. BOWLING CENTERS: TENPINS AND DUCKPINS

Element	Use	Issue	Comments
Settee/scoring area	Team area waiting/scoring table	Accessible route	The settee area is typically recessed to allow spectators a view over seated players while each competitor bowls. Access is required.
		Seating/furniture	Seating and furniture is typically built-in. Adaptable features may be solution: fold-up bench and writing surface.
Floor surface	Smooth for enhanced ball travel	Coefficient and slip resistance	The polished wood floor is an integral part of the sport. No change anticipated.
Ball retrieval area	Ball retrieval	Reach range accessible route	Retrieval mechanism and trough vary. Reach may be restricted. Adequate maneuvering space should be required.
Lighting	Alleys/score table	Visually impaired person	Bar/lounge often associated with spectator areas, therefore dimly lit. Brightly lit alleys. Task light at score table.
Signage	Communication	Effective communication	ADAAG applies.
Gutter	Recessed trough	Edge condition	No change anticipated.
Employee area	Work area pin-setting machines	Accessible route	To be studied.

b. Horse Racing Facilities: Thoroughbred, quarterhorse, harness racing typically involve grandstands, pari-mutuel betting, food service, jockey's room, staging and equipment rooms, paddocks, stables, and other horse/athlete amenities.

Element	Use	Issue	Comments
Parking, entry, food service, etc.	(Covered by ADAAG)		
Entry and turnstiles	Mechanical arm	Narrow passage/ accessible route	Proximity
Grandstand	Bleachers general admission box seats, club dining	Line-of-sight	
Wagering windows	Pari-mutuel betting or voucher machines	Communication	Voucher machines provide alternative for hearing impaired.
Paddock area	Ground surface: soil/mulch	Accessible route	Horse/rider, safety and welfare must take precedence.
Winners circle	Ground surface: soil/mulch	Accessible route	Route from grandstand and paddock.
Stables/tack room	Ground surface/bedding	Accessible route	

c. Indoor Track: Facilities include all indoor running tracks, dedicated jogging tracks, and other indoor facilities intended for running and jogging for fitness and competition.

Element	Use	Issue	Comments
Lanes color/width	Boundary/control	Width color contrast	Lane width is delineated by surface striping, therefore no barriers are presented.
Track surface	Field-of-action, traction	Accessible route/entry	Tracks are often banked (used primarily for competition). Retain banked surface due to nature of sport. Consider interior/exterior level track surface adjacent to banked track.
		Coefficient of friction	Recommend consistency with ADAAG surfacing requirements.
Portable tracks	Temporary setup for competition	Accessible route	Banked surfaces and raised track. Consider an accessible route across the most level area.
Guardrail/safety rail	Safety, particularly in elevated tracks	Visual impairments	Height covered by existing codes in elevated areas. Guardrails for visually impaired may be a program access issue.
In-field	Ancillary/support areas	Accessible route	Often, other recreational activities are provided inside the circular track. Transition and maximum slope (ADAAG) should apply.
Pull-out area	Resting, stretching	Accessible route	Need to consider acceleration, deceleration, direction of movement, and amount of area available.
Signage	Communication	Effective communication	Consistent with ADAAG.

3. Existing/Proposed ADAAG Changes

EXISTING: (none)

PROPOSED: (none)

Common Elements & Systems

1. Elements & Systems
- assistive listening systems
- spectator seating
- locker rooms

a. Assistive listening systems (ALS) Comparison - Wide-Area

General Overview:

The term assistive listening devices includes many auxiliary aids and services, only one of which is "assistive listening systems." Other devices and services include "Qualified interpreters, notetakers, computer-aided transcription services, written materials, telephone handset amplifiers, . . . , closed caption decoders, open and closed captioning,

telecommunications devices for deaf persons (TDD's), videotext displays, or other effective methods of making aurally delivered materials available to individuals with hearing impairments."

Assistive listening systems (ALS), when used properly, can offset the communication barriers created by distance, background noise, reverberation, and distortion caused by overamplification.

It does require that the desired signal or source of sound be "captured" or fed directly into the system. Ideally, a quality microphone should be placed three to six inches below the speaker's chin, and audio feed signals from mixers or other sound sources must be as clearly audible as possible with minimal background sound.

When properly installed, the audio signal is fed via a hardwired cable, by a magnetic inductive field generated by a loop of wire, by an FM transmitter, or by an infrared emitter. That audio signal is fed by cable into a hardwired listening jack, or through a telecoil in a hearing aid, or broadcasted into an FM receiver, or beamed by light to an infrared receiver.

There are many ways to get that audio signal up into the ear or hearing aid from the hardwired listening jack or the listening jack on a loop receiver, FM receiver, or infrared receiver. Care must be taken to provide an assortment of listening attachments.

Listening attachments and recommended use are as follows:

- Earbud: for normal to moderate hearing loss.

- Double earbud: for normal to moderate hearing loss.

- Power button: used with stethoscope listener for moderate to severe hearing loss.

- Neck loop: used in conjunction with hearing coils equipped with telecoils for moderate to severe hearing loss.

- Headphones: for normal to moderate hearing loss.

System: Audio Induction Loop - Permanently Installed

Components: Amplifier, whose output is fed to a *loop of wire* encircling the listening area. *Audio input* is from microphones, mixer, or other sources. Current through the loop wire or coil creates an electromagnetic field radiating the audio signal. This can be detected by other coils such as hearing aids equipped with telecoils, and *telecoil-equipped audio loop receivers* which can be used with a *variety of listening attachments*.

Receivers: a telecoil-equipped handheld *wand receiver* with built-in loudspeaker to hold next to the unaided ear;

- a *hearing aid* (typically behind the ear, or body and some of the in-the-ear models) *equipped with a telecoil* (identifiable with a "T" position on the on/off switch of the hearing aid) (*user*-supplied); or,

- a *cigarette-pack sized* audio induction loop receiver with volume control, a battery, a telecoil, and a jack to connect a selected listening attachment. Some have mono jacks, while others are stereo. May have a wrist strap, belt clip, or belt pouch case.

Listening Attachments: If *user's* hearing aid telecoil(s) are weak, then use of an audio loop receiver with neckloop or silhouette creates a smaller, stronger magnetic field closer to the hearing aid.

Advantages:

- Fewer receivers are required. (See note, end of this section)

- Transmits directly to users with telecoil-equipped hearing aid(s) for whom alternative receivers are not needed. (See note at end of this section.)

- Induction loop receivers are compatible with all loop systems.

- Low-maintenance and simple to operate.

- May be integrated with public address systems and mixers.

• Some amplifiers are equipped with automatic gain control to compensate for varying voice levels and distance from speaker to the microphone.

• A portion or the entire perimeter can be "looped."

• Ideal for placemat-sized loops at window/service counters and small dining-table sized restaurant areas.

Note: As of 1993, only 25 to 33 percent of people who could benefit from hearing aids actually used them. Of those hearing aids in use, only four percent were equipped with telecoils. Therefore, facilities must provide many audio loop receivers.

Disadvantages:

• Receivers are still required. (See note in previous section)

• If user does not have a telecoil-equipped hearing aid, then requires administration and maintenance of receivers and listening attachments.

• Non-secured system. (Signal spillover to areas adjacent to, above, and below the installed area can be picked up.)

• Looped areas exceeding 125 feet perimeter tend to be weaker in signal strength than is desirable.

• Generated magnetic field cannot be contained, controlled, or predicted, especially in very large looped areas.

• Susceptible to electrical interference and ambient magnetic fields caused by electrical wiring, dimmers, computer monitors, electrical wiring, transformers, fluorescent lamp ballasts, and motors.

• Portable loop systems must have loop wire secured to reduce risk of accidental falls.

• Pre-looped areas that are built-in are difficult to remove, repair, and upgrade.

• Permanent systems require the installation of loop wire, which is a labor-intensive expense, and sometimes difficult in existing buildings as opposed to in new construction.

Typical Applications:

Box office/teller/ticket or gate windows

Customer service counter areas

Transportation ports

Public transportation

Tour buses and automobiles

Meeting rooms and conference rooms

Auditoriums (portions) and classrooms

Houses of worship

Audiovisual aids and presentations (TV/VCR audio outputs)

Museums and theme parks

Arenas (portions) and sports stadiums (portions)

Retirement complexes and nursing homes

Medical offices and hospitals

Not advisable for use in areas where sensitive or classified subject matter is discussed.

System: FM - Permanent or Portable

Components: *FM transmitter*, either a battery-operated and body-worn portable, or an AC-powered base station transmitter. Some are tunable to several frequencies. *Audio input* is from microphones, mixer, or other sources. Audio signal broadcast range is 300 to 350 feet depending on type and installation of antenna. The signal is picked up by *FM receivers* tuned to that frequency, and heard through *listening attachments* fitted to the user.

Receivers: a *cigarette-pack sized FM receiver*, which may be single-channel fixed-frequency, or capable of being tuned. It has a volume control, a battery, and

a jack for connecting a listening attachment. Some have mono jacks; others are stereo. May have a wrist strap, belt clip, or belt pouch case.

Advantages:

- FCC-designated frequencies of 72 to 76 Mhz wide/narrow band.
- Fixed single or tunable transmitters and receivers available.
- May work with personal FM systems on the same frequency.
- Multiple frequencies enable use for multi-language translation simultaneously, and for adjacent areas to use different frequencies simultaneously without spillover.
- Can be readily portable, or permanently installed.
- Highly portable when using the battery-powered body-worn transmitter with lapel or headset microphone.
- Easy installation, low maintenance, simple operation.
- May be integrated with public address systems and mixers.
- May be used indoors and outdoors.
- Range of 300 to 350 feet through walls and around corners.
- Can monitor program from nearby, or tape-record the signal.
- Helpful to transcriptionist listening to and typing the proceedings of a meeting conducted nearby.

Disadvantages:

- Receivers are required for everyone wanting to use system.
- Requires administration and maintenance of receivers and listening attachments.
- Non-secure system. (Signal spillover can be picked up.)
- Susceptible to electrical interference from other FM devices, mobile telephones, cellular pagers, personal communicators, microwave signals, television and radio station transmissions, police/security communications.
- Susceptible to electromagnetic interference from dimmers, motors, etc. when the FM receiver is coupled to a neckloop or inductive silhouette for use by listeners with telecoil-equipped hearing aids.
- Interference if two or more transmitters on the same frequency are in simultaneous use.
- Limited to 8 to 10 wideband or 32 narrowband width channels, which are not strictly compatible.

Typical Applications:

Public transportation

Tour buses and automobiles

Indoor and outdoor guided tours

Meeting rooms and conference rooms

Auditoriums and classrooms

Houses of worship

Audiovisual aids and presentations (TV/VCR audio outputs)

Museums, theme parks, movie houses

Arenas and sports stadiums

Retirement complexes and nursing homes

Medical offices and hospitals

Outdoor events

Not advisable for use in areas where sensitive or classified subject matter is discussed.

System: Infrared - Permanent or Portable

Components: *Infrared emitter* (panel with light-emitting diodes) with *built-in or separate driver* and AC-powered. Number of emitters and connecting cables depends upon the coverage/saturation intensity of infrared light needed. Emitters vary in size and saturation capability. Major brands operate on the 95 Khz frequency. Some emitters can operate on other frequencies to permit simultaneous language translation. *Audio input* is from microphones, mixer, or other sources. Audio signal is a factor of proper selection and installation of emitter, receiver quality, and room conditions. The signal is picked up by *infrared receivers* on that same frequency, and heard through *listening attachments* fitted to the user.

Receivers: a *cigarette-pack sized infrared receiver* with a volume control, a battery, and a jack for connecting a chosen listening attachment. Some have mono jacks, while others are stereo. May have a belt clip or neckstrap;

- a chinset (stethoset or *under-the-chin) type of infrared receiver* with airtubes. Weight rests in ears. Has a battery and volume control. Some models do not have a jack for connecting appropriate listening attachments, or jack is mini; or,

- a headset (headphone or *over-the-head) type of infrared receiver* with headset speakers at ear level. Has battery and volume control.

Advantages:

- Secure system. Signal contained within the emitted area.

- Single-channel and multichannel emitters are available.

- May work with same frequency as personal TV/VCR/stereo home infrared system receivers brought in by their owners.

- Multiple channels enable use for multiple-language simultaneous translation.

- Can be portable by using tripod mounting, or permanently installed using wall-mount brackets.

- Portable and compactly packaged systems available.

- Easy installation, low maintenance, simple operation.

- May be integrated with public address systems and mixers.

- Area coverage nearly unlimited by linking emitters.

- Most (commercial and home-use) infrared receivers are compatible with most major-brand emitters.

- When properly installed, least affected by room environment.

- Will not interfere with electronics.

- When installation is properly designed, does not require direct line of sight between the emitter and the receiver's diode.

- At least one manufacturer offers a photo ID user's card program, to trace and replace lost or stolen receivers.

Disadvantages:

- Receivers are required for everyone wanting to use system.

- Requires administration and maintenance of receivers and listening attachments.

- Susceptible to electromagnetic interference from dimmers, motors, etc. when the infrared receiver is coupled to a neckloop or inductive silhouette for use by listeners with telecoil-equipped hearing aids.

- Interference from presence of large solid object shadows.

• Ineffective in sunlight, outdoors, and intense incandescent lighting.

• Receivers of different manufacturers vary in their sensitivity to camera photo flashes, theater performance special effects, show lighting, low-saturation emitters, and improper installations.

• May be affected by infrared remote controller for any audiovisual aids and presentations.

• Infrared chinset receiver eartips are difficult to sanitize.

• Some chinset and headset infrared receivers lack a jack for alternative listening attachments.

Typical Applications:

Where confidentiality is essential for sensitive/classified material

Public transportation and tour bus interiors (may require shades)

Meeting rooms and conference rooms

Auditoriums and classrooms

Houses of worship

Courtrooms, jury deliberation rooms, government offices

Corporate board rooms

Audiovisual aids and presentations (TV/VCR audio outputs)

Museums, theme parks, movie houses, and live theater

Indoor or covered arenas and sports stadiums

Retirement complexes and nursing homes

Medical offices and hospitals

System: Hard-wired - Permanent or Portable

Components: Hard-wired means that the speaker is connected to the listener via microphone, amplifier, and listening attachment. Wide-area facilities have a need for this inexpensive means of one-way or two-way communication at box office windows and service counters. *Microphone(s), volume-controlled amplifier(s), and listening attachment and loudspeaker* are directly wired.

Hardwired devices may be permanently installed, such as the *two-way handsets* in a prison visiting booth, a teller window, or a security entrance checkpoint. Because they constitute a secure system, they are an inexpensive means of equipping a jury room.

They can be portable *battery-operated cigarette-pack sized amplifiers with jacks* to plug in microphones and listening attachments. Portable units work well for handling on-site communications, medical emergencies, and accidents (when trauma and possible loss of hearing, or loss of hearing aid, has occurred).

Some houses of worship have had earphone jacks and even volume controls installed at pew seats. These jacks are directly wired to the amplifier and its audio signal. Such a system is expensive to install, and is not feasible for wiring to a large number of fixed seats.

Listening Attachments: See description/sketches at end of paper for specific types of attachments and user's needs.

Advantages:

• Secure system ensures privacy.

• Lowest-cost one-to-one communication.

• Suitable for typical applications described for wide areas.

• Ideal and inexpensive for jury deliberation rooms.

• High-quality signal.

• No frequency adjustment needed.

• Enables one or more hard-of-hearing persons to communicate in small groups or in one-on-one situations.

• Can be permanently wired/installed.

• Battery-operated portable units are easy to operate/store.

• Suitable for the initial contact with hard-of-hearing person having communication difficulties and in emergencies.

Disadvantages:

• Expensive to install wiring to multiple seats—not feasible.

• Listener is limited to prewired fixed seats for choices.

• Speaker and listener are limited by cord lengths "leashed" or wired to achieve communication; mobility especially restricted with permanent installations of microphones, listening attachments, and loudspeakers.

• Requires volume control for individual listeners.

• Speaker must get close to the microphone for clearer signal.

• Every listener needs an amplifier or volume control, a jack, and his or her chosen listening attachment.

Typical Applications:

Where confidentiality is essential for sensitive/classified material

Jury deliberation rooms

Box office/teller/ticket or gate windows

Customer service counters

One-on-one meetings lacking privacy

Security entrance checkpoints

Medical emergency kits

Initial contact (screening) with person experiencing communication difficulties

Counseling, therapy, hospital and medical office settings

Retirement complexes and nursing homes

Small group meetings

Listening Attachments

Many of the earbuds and headphones available to the public are stereo. Some patrons may prefer to bring their own listening attachments with them to use at the facility. In addition, staff and patrons may be concerned about the sanitary condition of the house-owned earpieces. It may be useful to select receivers that accept the standard stereo plugs and promote their availability.

This will allow patrons to bring their own earpieces or have them permanently "purchase and reserve" a new listening attachment for their ears only. Regular patrons of infrared equipped sites can be encouraged to bring their home infrared receiver and listening attachment for their enjoyment; this reduces staff maintenance and care of equipment.

Listening attachments for hard-wired, loop, FM, and infrared receivers must be matched to the listener's needs and type of hearing aid (if any). Staff must be trained to spot direct audio input and telecoil markings on hearing aids. A greater variety of attachments must be available than the quantity of receivers on hand, to ensure that the listener will be able to effectively couple to the receiver.

Assistive listening systems, when supplied, typically equip a receiver with a mono single earbud or chinset airtubes. All other types of listening attachments often have to be ordered separately.

An earbud or airtubes may be acceptable for the general public and for those with mild hearing losses. They are not necessarily the appropriate listening attachments for people with moderate to severe to profound losses. These are the

hard-of-hearing patrons who need to use an ALS in order to understand anything in wide-area settings. An ALS with just earbuds/airtubes is like no accommodation at all. Compliance is not achieved with just earbuds. The need for other listening attachments such as neckloops, headphones, and the like cannot be ignored in wide-area settings. Persons who wear hearing aids may need to couple the hearing aids to receivers. This allows the hearing aids to process the signal and emphasize the frequencies in speech these persons cannot understand. This is accomplished with the telecoil and direct audio input options. High-powered button transducers with eartips or a stethoset enables even those with profound hearing losses to get some benefit from the ALS receivers, even in noisy environments.

It is recommended that a communications access advisor be consulted to help determine quantities, and to conduct on-site evaluations and followup staff training. Signage throughout the facility and in printed literature should have the communications access symbol, with lettering to indicate the location and nature of the accommodation being provided.

Listening attachments for assistive listening systems include:

- Single earbud (mono only)
- Double earbud (mono and stereo)
- Headphones (mono and stereo)
- Neckloop (mono and stereo) (used by listeners with telecoil-equipped hearing aids)
- Inductive silhouette (mono and Y-corded stereo) (used by listeners with telecoil-equipped hearing aids)
- High-powered button transducers with eartip and cord (used by listeners with moderate/severe/profound hearing loss)

Users who have direct audio input or cochlear implants are likely to supply their own cable to connect to the receiver, or they may have/use telecoils:

- Cord to cochlear implant processor (user-supplied)
- Cord to direct audio input on aid (user-supplied)

b. Locker Rooms

Locker rooms are covered by the current ADAAG requirements for toilet, bathing, dressing room, and storage facilities. However, the existing requirements do not anticipate unique aspects of locker rooms—20-head gang showers, large open dressing areas surrounded by 200 lockers—in their treatment of accessible elements and spaces.

ADAAG stipulates that accessible routes shall have a cross slope no greater than 1:50. However, in gang showers and other "wet areas" of locker rooms, proper water drainage will require slopes of at least 1:48 (1/4 in./ft.). The ADAAG level-change and cross slope provisions must be slightly modified to accommodate this drainage factor.

While gang showers far exceed the ADAAG dimensional requirements for a roll-in shower stall, the Guidelines' grab bar specifications and apparent limit of one shower head per accessible shower suggest that a single-use roll-in or transfer shower stall must be incorporated into the gang shower design. Accessible shower stalls should not be remote from the regular shower facility, and may open directly into a gang shower.

The communal or common aspects of locker room use also introduce issues of privacy in the case of assistance by friends or family members of the opposite sex, issues that are not relevant to showers in hotel rooms or changing clothes in a dwelling unit. Accordingly, providing a single-use, accessible unisex locker room in addition to the accessible amenities in the men's and women's locker rooms is essential to making sport facilities usable by persons with mobility impairments. Such single-use rooms should be equipped with a lavatory, watercloset, shower, and lockers. The number of lockers should be at least 5% of the number of lockers in the men's or women's locker room, as a series of people may use the unisex room while in the facility.

While serving the needs of persons with mobility impairments, single-use unisex facilities also benefit families with small children. For example, a father with a five-year-old daughter may not wish to have her change and shower in the men's locker room or to send her unattended into the women's room. Where unisex rooms have been provided, this "family room" function has proven to be popular, with the accessibility element being almost incidental to family use.

Summary Matrix: LOCKER ROOMS

Element	Use	Issue	Comments
Drinking fountains		Cuspidors	Cuspidors are often provided to discourage use of drinking fountain for spitting. A standard design is required.
Unisex locker room	Alternate provision for persons needing assistance or special services	Occupant assistance/privacy	Provide where separate men's and women's rooms are provided.
Locker/storage	Storage of personal belongings	Size, reach range, access route	Additional ADAAG guidance.
Shower facilities		Wheelchair access	Gang showers do not meet current ADAAG requirements—additional accessible shower stall required.
Benches	Dressing	Functional bench/changing area	Dressing/locker room benches situated between locker rows, if provided, do not provide back support required by ADAAG.

c. Spectator Seating

Companion Seating in Sports Stadiums

Companion seating for wheelchair users is an important feature for full spectator enjoyment of sports and entertainment facilities. The required ratio of companion seating to wheelchair spaces, and their relationship to the same, are also important factors in selecting the types of seats most suitable for the family and friends of wheelchair users. ADAAG 4.33.3 specifies that *at least one companion fixed seat shall be provided next to each wheelchair seating area*. Inquiry on this issue relates to the interpretation that at least one fixed seat must be located immediately adjacent to each wheelchair location.

For reasons of both cost and efficiency, the above-referenced interpretation results in a seating arrangement such as the 2-2-2 distribution shown in Figure 1.1. Subcommittee experience indicates that while this arrangement satisfies the letter of the requirement, it falls short of its intended purpose of providing convenient and workable companion seating for wheelchair users. For example, the 2-2-2 distribution works fine for one wheelchair user plus one companion. But just as other spectators come to events in a range of group sizes, so, too, do wheelchair users. Yet the 2-2-2 arrangement is inflexible for a group of wheelchair users who wish to sit together, or for a paraplegic parent, for example, who wishes to sit with a group of family and friends who are not mobility-impaired.

Use of adaptable seats has been promoted in order to provide the necessary flexibility to accommodate the broad range of seating needs that various groups of wheelchair users have. Many companies now make various types of seats that fold in place, to accommodate the current market demand for this kind of flexibility. Subcommittee experience, however, is that an adaptable seat cannot be used for both companions and wheelchair users in a strict one-to-one ratio because of space limitations. In other words, the features that make fixed seating flexible, also add width to the seating unit and therefore require more space. The resultant additional space requirement for each seat significantly impacts the horizontal distribution of wheelchair seating locations and associated companion seats. In some cases, planned stadiums and arenas have had to abandon the concept of flexible seating, despite its obvious benefits, and have reverted to the 2-2-2 arrangement. Studies indicate that a slight relaxation of the "immediately adjacent" companion seat requirement to a 0.7-to-1 ratio, for example, would allow viable alternative seating arrangements such as adaptable seating, which would be beneficial both to persons with disabilities and to facility operators. While a change to the ADAAG requirement of a 1-to-1 ratio of companion seat to wheelchair location is not advocated, we do feel that a more flexible interpretation of the "next to" provision would allow for a range of good alternative configurations. The efficiencies associated with these alternative approaches to companion seating more than offset any perceived loss of benefit from the 2-2-2 arrangement.

Successful integration of special wheelchair spaces into the general seating arrangement is a function of the seat design, the size of the wheelchair spaces, and any special modifications made to enhance sightlines. If wheelchair seating spaces need to be vertically elevated to improve sightlines, for example, the raised platforms become further segregated from the general seating pattern. Similarly, extra-wide or unoccupied wheelchair spaces break the regular rhythm of seats and create obvious "open areas" in the tightly-packed crowd. (See Figures 1.2 and 1.3.) One way to address the problem of unoccupied wheelchair spaces and empty companion seats is by creating an efficient seating plan and by using adaptable seating. In summary, to encourage the use of new technologies that benefit people with disabilities, some flexibility in the interpretation of the provision requiring fixed companion seats "next to" wheelchair seating locations may be warranted.

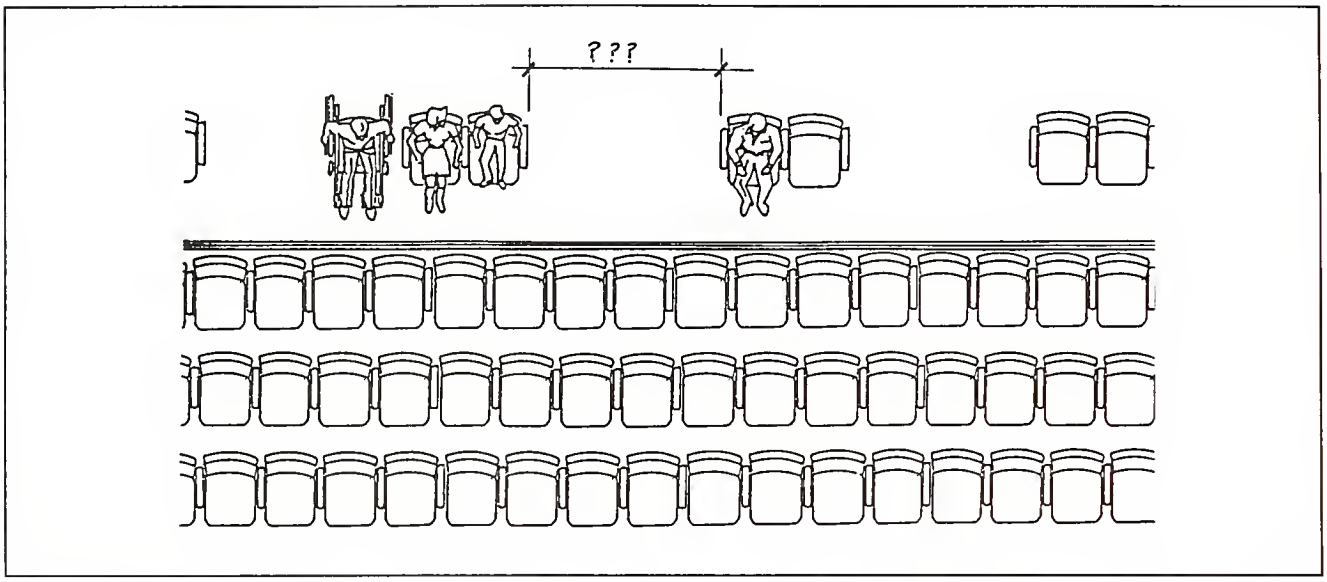

Figure 1.1 Seating Groups

Figure 1.1. Seating Groups This group of four creates a problem for the 2-2-2 distribution of companion seats and wheelchair spaces. The group must be separated by an open space which becomes essentially unusable.

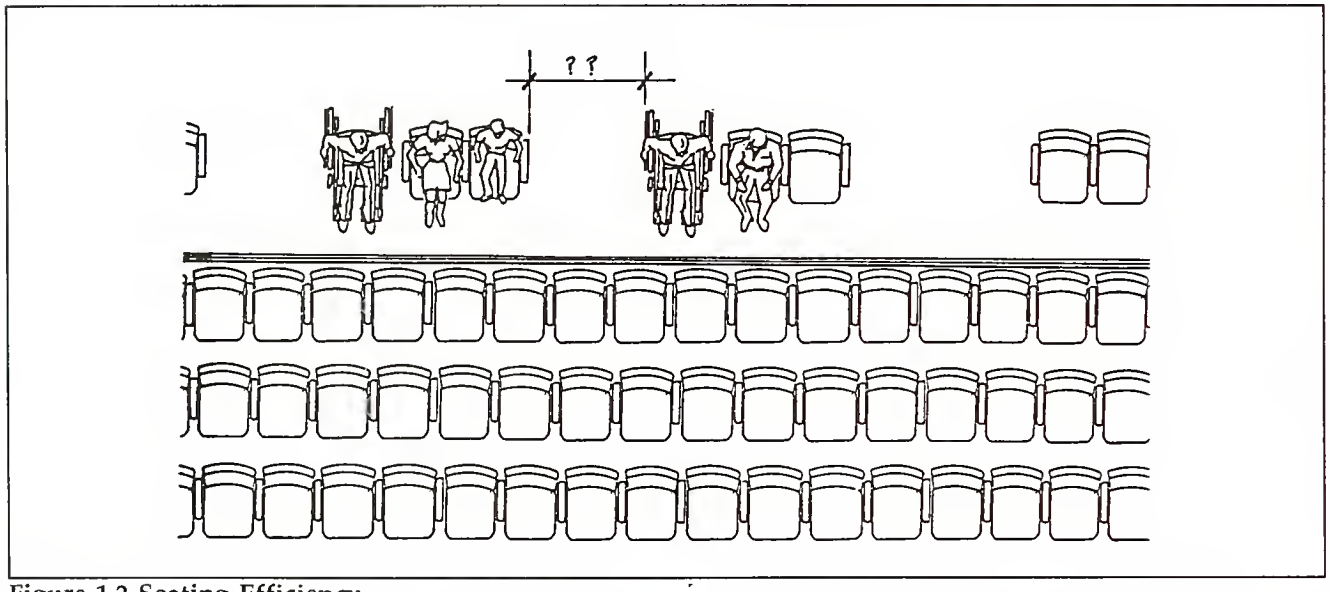

Figure 1.2 Seating Efficiency

Figure 1.2. Seating Efficiency This two-person group and the three-person group leave an extra space open in the 2-2-2 plan. It is unlikely that the space can be sold. Therefore it becomes an open "aisle" to the railing.

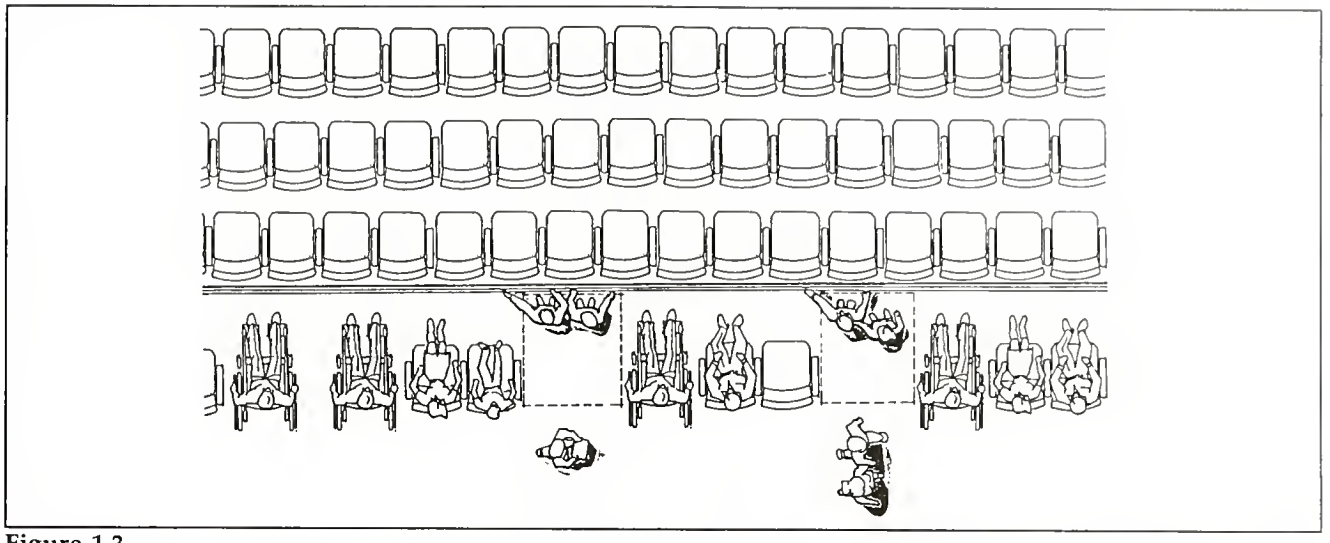

Figure 1.3

Figure 1.3. Open spaces left in the seating arrangement invite passersby to step through to reach the railing to watch an exciting event that takes place when they are out of their seat.

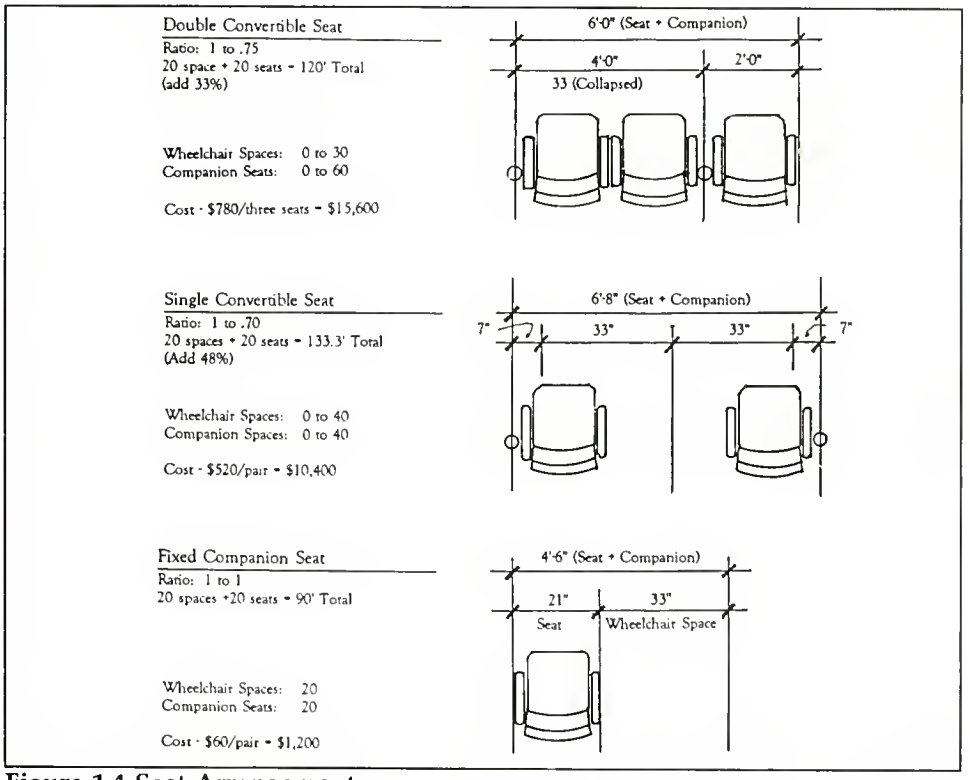

Figure 1.4 Seat Arrangements

Figure 1.4 Seat Arrangements: This chart illustrates the space requirements and costs of seating alternatives. The most efficient system is the double convertible seat, but that system takes 33% more linear feet and initially costs much more.

Comparable Sightlines In Sport Facilities

In sports facilities, the ability to gain access, sit in integrated seating, and observe the action is the primary objective in providing accessible features. With respect to sightlines for wheelchair users, clarification of what constitutes "comparable" sightlines is needed. The following analysis is provided for consideration.

The Americans with Disabilities Act Accessibility Guidelines require that wheelchair locations in places of assembly provide lines of sight *comparable* to those in other general seating. There are established industry standards used to compute sightlines for these facilities that are based on spectators seated in either chairs, bleachers, or stadium seats, depending on the specific facility. Sightlines for wheelchair users are computed in an identical manner, with only minor adjustments for the wheelchair seat height. It may not be practical nor necessarily desirable to use a different method to compute sightlines for wheelchair users. It may be appropriate, in some specific facilities, however, to enhance sightlines at the wheelchair seating locations. The sightline requirement is important because it can directly affect the integration of wheelchair spaces and their dispersion throughout in the stadium. In some types of facilities, enhancement is not necessary; and in some seating configurations, it is not practical.

Theoretical analysis of spectator sightlines for a large sports facilities is a complex problem. Sightlines in stadiums are not as simple as the lines-of-sight in a movie theater, for example, which has a fixed screen (which may be curved or tilted) and a much smaller seating capacity. In fact, the sightlines in sports stadiums change constantly as the action shifts position on the field-of-play.

The theoretical center of the sightlines (focal point) changes for different stadium events. In track, for example, the outside runner on the oval is the focus of the sightlines. In baseball, a spot on the field that is located ten feet behind home plate is the theoretical focal point. Seating arrangements provide clear lines-of-sight to these focal points using both vertical and horizontal components.

The vertical sightline components are based on a several assumptions. For example, the basis assumes that all spectators are of equal stature in the seated position and that they all sit in a similar erect position. In reality, there are of course significant anthropometric variations among adults, and even greater variations among children. There are also subtle differences for wheelchair users, because they typically sit 2" to 3" higher than spectators of equal stature seated in stadium seats. Even this small height difference is significant because it is equivalent to the rise between successive rows in lower seating sections.

In most sports facilities, the industry standard is to allow spectators to see over the heads of spectators seated two rows in front. This typically requires a constant drop of 2¼" to 2½" for each row. The actual sightline angle is related to the angle of the seats. The seat incline is typically flatter in the lower sections and much steeper in balconies. Sightlines are never computed for people in the standing position, or for circumstances where some people are standing while others are sitting.

There are numerous difficulties with computing the actual and theoretical sightlines for standing spectators. For example, the anthropometric differences among adults double when compared to the variations in the seated position. For children, the differences in stature are even greater. When spectators stand up, there is a high probability that short people will not be able to see over the spectators in front of them. Their view is also affected by other factors. For example, people in front may move horizontally to one side or the other, depending on the location of the event on the playing field. Furthermore, people may rise up on their toes. Small children may be lifted by their parents. For all these reasons, it is not practical to forecast actual sightlines for any spectators in the standing position.

The horizontal components of sightlines are easier to describe and can be achieved with more certainty than the vertical components. The horizontal component is provided by staggering successive rows of seats so that spectators in the row behind always look between people seated in the row in front. In

fixed seating, this "stagger" can be accomplished by the geometric configuration of the rows or by adjustments to the width of the seats themselves. The horizontal component of sightlines is usually more effective than the vertical component and, as a practical matter, most people look between, rather than over, the spectators seated in the rows in front. For this reason, the view to the side is always more restricted than the view straight ahead.

For spectators in wheelchair spaces, sightlines should be comparable to those of other spectator seating. In addition, spectators in the rows behind the accessible seats should be able to see over spectators seated in wheelchairs. For some types of events, spectators often stand up during contests. This blocks the view of wheelchair users, who cannot stand up, and also the view of many short people and children. In some instances, the sightlines for accessible seating can be "enhanced" by elevating the seat platform. This arrangement provides a *superior* view, especially to the sides, when all the spectators are seated.

Depending on the amount of enhancement, it also provides a view that is comparable to that of a tall person when people stand. This "enhancement" however, can only be provided at specific locations (such as the last row). Furthermore, providing it increases the overall size of the facility, and increases the horizontal distance to the last row(s) of seating.

The angle of seating (the rise) also affects the practicability of providing enhancement. For seats that are steeply angled, such as balcony seats, the vertical elevation would need to be as much as three times greater than lower seats with a flatter rise in order to achieve a similar sightline. Enhancement is also more difficult to provide in facilities with bleacher-type seating and with non-fixed chairs.

In summary, we recommend that sightlines be measured in a similar manner for all spectators in stadiums and sports facilities, including wheelchair users. Consideration should be given to making a significant percentage of the required wheelchair seating locations enhanced for better viewing when spectators are standing. A more specific scoping requirement should be established based on further study and analysis. We also recommend that future revisions to ADAAG for accessible seating require enhanced sightlines for wheelchair spaces when this is appropriate and when it can be practically achieved in the specific facility.

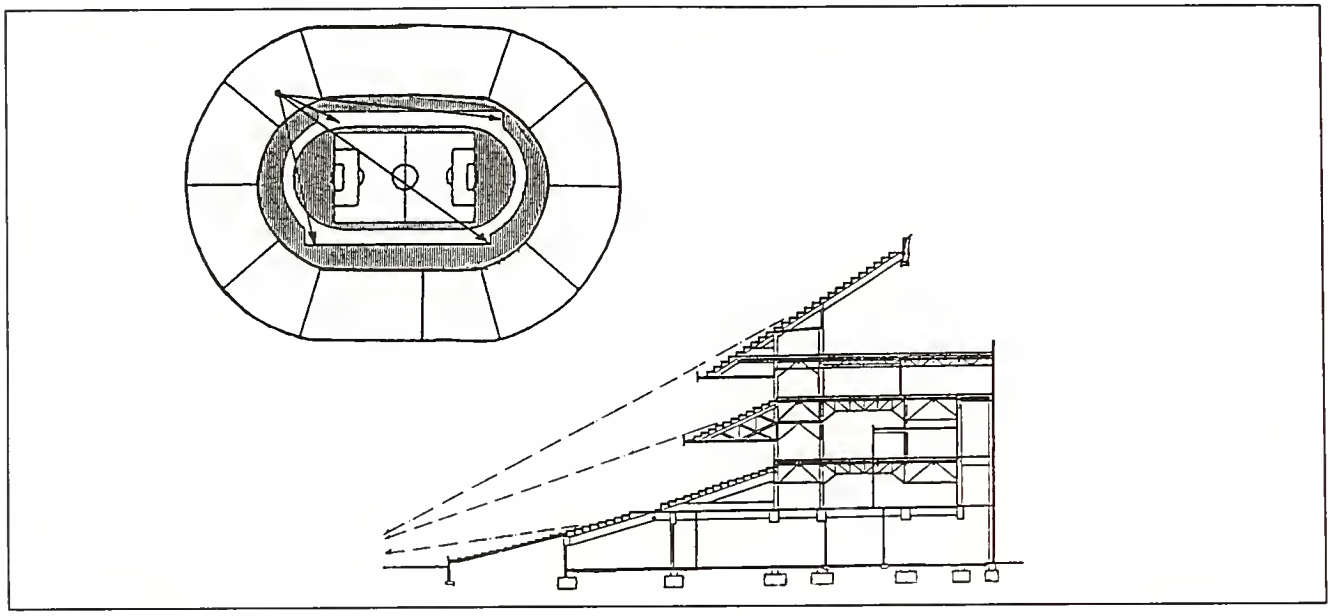

Figure 2.1

Figure 2.1 Stadium Sightlines. Lines-of-sight for a stadium are complex because the event can take place at any location on the playing field. The mathematical calculations, however, are based on a theoretical focal point.

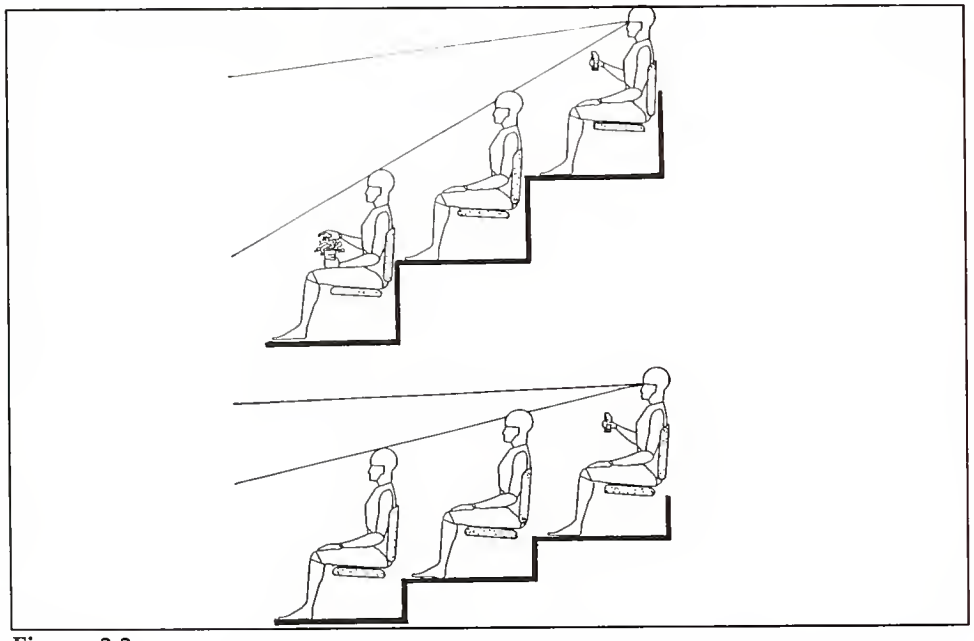

Figure 2.2

Figure 2.2 Vertical Component of Sightlines. The line-of-sight for stadium seating is designed so that a spectator will see over a person of similar stature seated two rows ahead. This means that the spectator seated one row ahead will probably project 2¼" into the line-of-sight.

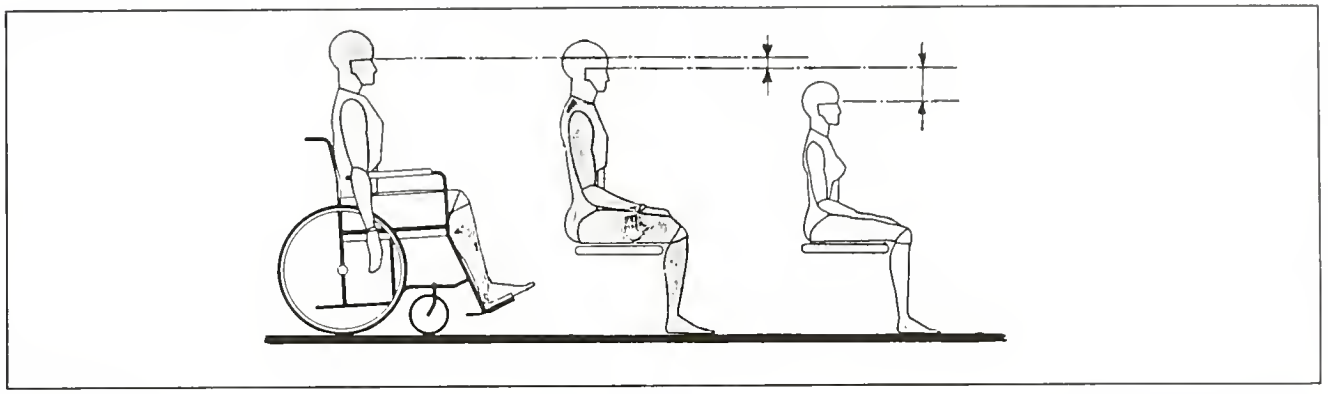

Figure 2.3

Figure 2.3 Anthropometrics. The vertical component of the sightlines is also influenced by anthropometric differences between people. These can exceed 10", even between adults. The difference is also determined by the seating itself. For example, a person seated in a wheelchair is typically 2" to 3" above a similar person seated in a stadium seat.

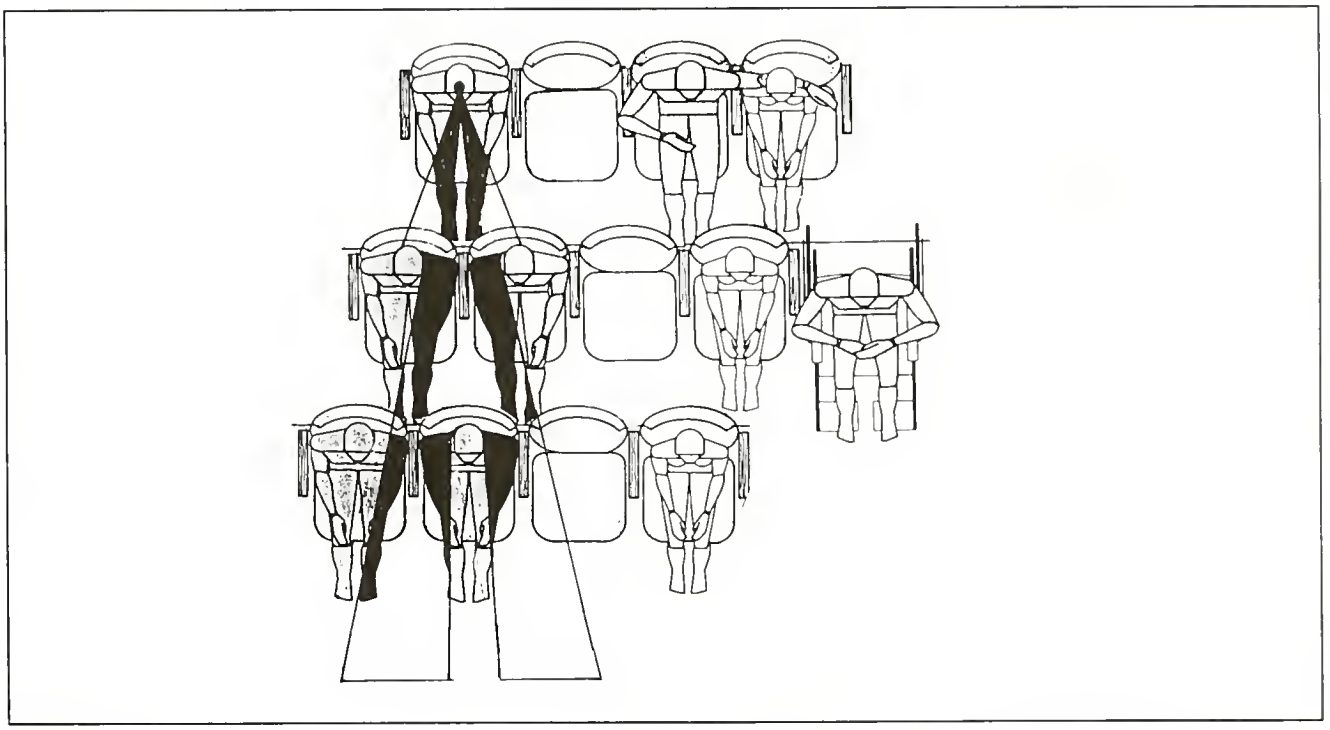

Figure 2.4

Figure 2.4 Horizontal Component of Sightlines. Much of the line-of-sight is determined by staggering the seats to allow a row to look between the heads of the row immediately in front.

Seating on Stadium Club Levels

Most large stadiums and arenas have club levels which contain a number of special amenities for special ticket holders. Often, these amenities include sit-down food service that also allows full view of game field activities. Is this area considered a restaurant, and therefore subject to the requirement of an accessible route to all seating areas? In many cases, the club restaurant is a continuation of the tiered stadium seats. It seems that the key issue is whether this area is primarily seating with food service as an incidental amenity, or whether this area is considered a restaurant. Providing an accessible route to all tables may be very difficult to achieve. The Access Board's guidance on how ADAAG applies to this unique area is also requested.

Spectator Seating: Summary Matrix. (Includes fixed and portable, permanent and temporary, flexible/movable, suites, boxes, skyboxes, bleachers, and other options.)

Element	Use	Issue	Comment
Individual fixed stadium/arena seating	General admission	Comparable line-of-sight	Seating requirements vary with facility type and sport, e.g., tennis vs. football.
		Dispersion integration	ADAAG applies, but requires some additional clarification and revisions.
		Price range	
		Level of services	
Skybox/suite	Individually/ corporately owned or leased	Accessible features	ADAAG applies, with clarification.
Bleachers	Low-cost/flexible seating	Comparable line-of-sight	Some ADAAG requirements are questionable: e.g., companion seating, vertical dispersion.
		Dispersion integration	

2. Existing/Proposed ADAAG Changes

COMMON ELEMENTS & SYSTEMS

SCOPE

EXISTING: 4.1.3(11) Toilet Facilities: If toilet rooms are provided, then each public and common use toilet room shall comply with ADAAG 4.22. Other toilet rooms provided for the use of occupants of specific spaces (i.e., a private toilet room for the occupant of a private office) shall be adaptable. If bathing rooms are provided, then each public and common use bathroom shall comply with ADAAG 4.23. Accessible toilet rooms and bathing facilities shall be on an accessible route.

PROPOSED: 4.1.3(11) Toilet, Bathing, and Locker Room Facilities

4.1.3(11)(a) If toilet rooms are provided, then each public and common-use toilet room shall comply with ADAAG 4.22. Other toilet rooms provided for the use of occupants of specific spaces (i.e., a private toilet room for the occupant of a private office) shall be adaptable.

Rationale: Provide more complete title of subsection.

EXISTING: (none)

PROPOSED: 4.1.3(11)(b) If bathing rooms are provided, then each public and common-use bathroom shall comply with ADAAG 4.23.

Rationale: Already required in ADAAG sections 4.22 and 4.23. Redundant.

EXISTING: (none)

PROPOSED: 4.1.3(11)(c)(i) If locker rooms are provided, then each public and common-use locker room shall comply with 4.xx.

(ii) Where there are separate bathrooms/changing rooms for male and female users, a third single-use, unisex bathroom/changing room shall be provided and shall comply with 4.xx. Single-use unisex bathrooms/changing rooms shall contain one water closet complying with ADAAG 4.16, one lavatory complying with ADAAG 4.19, one shower complying with ADAAG 4.21, one bench complying with ADAAG 4.35.4, and lockers complying with ADAAG 4.22.5 in a number equal to at least 5% of the number of lockers in either of the men's or women's locker room, whichever is greater. This provision does not require the installation of plumbing fixtures where none were originally intended.

Rationale: Locker rooms are typically found in sports facilities; they may have elements or amenities not found in other toilet/bathing facilities.

An accessible, single-use unisex locker room affords privacy and allows assistance by persons of the opposite sex that are not afforded in single-sex, group locker rooms.

For space and cost reasons, saunas and steam rooms should not be required in unisex rooms, even where provided in the "regular" locker rooms.

Even though the locker room is of single use at any given time, many people who have used the room may be in the sports facility at one time. Thus, more than one locker should be provided.

TECHNICAL REQUIREMENTS

EXISTING: (none)

PROPOSED: 4.xx Locker Rooms.

4.xx.1 Minimum Number. Locker rooms required to be accessible by 4.1 shall comply with 4.xx and shall be on an accessible route.

Rationale: There are no existing requirements in ADAAG. The subcommittee saw a need to make a distinction between locker rooms and "dressing rooms."

EXISTING: (none)

PROPOSED: 4.xx.2 Doors. Doors to accessible locker rooms shall comply with ADAAG 4.13. Doors shall not swing into the floor space required for any fixture.

EXISTING: (none)

PROPOSED: 4.xx.3 Clear Floor Space. The accessible fixtures required in 4.xx.4, 4.xx.5, 4.xx.6, 4.xx.7, 4.xx.8, and 4.xx.9 shall be on an accessible route. An unobstructed turning space complying with ADAAG 4.2.3 shall be provided within an accessible locker room. The clear floor space at fixtures and controls, the accessible route, and the turning space may overlap.

EXISTING: (none)

PROPOSED: 4.xx.4 Water Closets. If toilet stalls are provided, then at least one shall be a standard toilet stall complying with ADAAG 4.17; *where 6 or more stalls are provided, in addition to the stall complying with ADAAG 4.17.3, at least one stall 36 in. (915 mm) wide with an outward-swinging, self-closing door and parallel grab bars complying with Fig. 30(d) and 4.26 shall be provided. Water closets in such stalls* shall comply with ADAAG 4.16. If water closets are not in stalls, then at least one shall comply with ADAAG 4.16.

EXISTING: (none)

PROPOSED: 4.xx.5 Lavatories and Mirrors. If lavatories are provided, then at least one shall

comply with ADAAG 4.19. If mirrors are provided, at least one shall comply with ADAAG 4.35.4.

Rationale: Mirrors should meet the ADAAG dressing room mirror requirements, not the requirements for mirrors over lavatories, since typically they are in fact used for dressing.

EXISTING: (none)

PROPOSED: 4.xx.6 Controls and Dispensers. If controls, dispensers, receptacles, or other equipment *are* provided, *then* at least one of each shall be on an accessible route and shall comply with ADAAG 4.27.

EXISTING: (none)

PROPOSED: 4.xx.7 Shower Facilities. If single-user shower stalls are provided, then at least one accessible shower stall that complies with ADAAG 4.21 shall be provided. If multi-head gang showers are provided, then at least one accessible shower that complies with ADAAG 4.21 shall be provided immediately adjacent to each multi-head gang shower. Accessible shower stalls may open into gang showers.

Rationale: Gang showers cannot meet the existing ADAAG shower requirements, particularly the grab bar requirements. Requiring ADAAG shower stalls in all accessible locker rooms is necessary to make all amenities usable by persons with mobility impairments.

EXISTING: (none)

PROPOSED: 4.xx.8 Lockers. If lockers are provided, at least five percent (5%), but not less than one, shall comply with ADAAG 4.25.5.

EXISTING: (none)

PROPOSED: 4.xx.9 Benches. If benches are provided, at least five percent (5%), but not less than one, shall comply with ADAAG 4.35.4. Accessible benches shall be located adjacent to accessible lockers.

Rationale: Accessible benches must be adjacent to accessible lockers to accommodate changing clothes.

EXISTING: 4.25 Storage

4.25.1 General. *Fixed* storage facilities such as cabinets, shelves, closets, and drawers *required to be accessible by 4.1* shall comply with ADAAG 4.25.

PROPOSED: 4.25 Storage.

4.25.1 General. Fixed storage facilities such as cabinets, shelves, closets, drawers, and lockers required to be accessible by 4.1 shall comply with ADAAG 4.25.

EXISTING: 4.25.2 Clear Floor Space. A clear floor space at least 30 in. by 48 in. (760 mm by 1220 mm) complying with ADAAG 4.2.4 that allows either a forward or parallel approach by a person using a wheelchair shall be provided at accessible storage facilities.

PROPOSED: 4.25.2 [no change]

EXISTING: 4.25.3 Height. Accessible storage spaces shall be within at least one of the reach ranges specified in ADAAG sections 4.2.5 and 4.2.6 (see Fig. 5 and Fig. 6). Clothes rods or shelves shall be a maximum of 54 in. (1370 mm) *above the finish floor for a side approach. Where the distance from the wheelchair to the clothes rod or shelf exceeds 10 in. (255 mm) (as in closets without accessible doors) the height and depth to the rod or shelf shall comply with Fig. 38(a) and Fig. 38(b).*

PROPOSED: 4.25.3 [no change]

EXISTING: 4.25.4 Hardware. Hardware for accessible storage facilities shall comply with 4.27.4. Touch latches and U-shaped pulls are acceptable.

PROPOSED: 4.25.4 [no change]

EXISTING: (none)

PROPOSED: 4.25.5 Lockers. All space within accessible lockers shall be within at least one of the reach ranges specified in ADAAG sections 4.2.5 and 4.2.6.

SUBCOMMITTEE COMMENTS ON ASSEMBLY AREA STUDY

The following comments are intended to further assist the U.S. Access Board in drafting guidelines for Assembly Areas, and are not intended to diminish the intrinsic value of the final report. NOTE: To receive a copy of the Assembly Areas research report, please contact the Access Board. References to sections such as 3.5 are current ADAAG provisions.

3.5 Definitions

Ancillary Areas. It is unclear as to where and how this proposed definition is intended to be used within the proposed changes to ADAAG. This definition is not necessary in scoping the coverage buildings under the new construction and alterations requirements of ADA. Clearly, the application of ADAAG to both "places of public accommodations" and "commercial facilities" is identical in new construction and alteration. The only exception to the full ADAAG requirements occurs at "areas used only by employees as work areas."

Supplementary information to both the Access Board's Final Guidelines and the Department of Justice Title III Final Rule indicates that the exception applies specifically to "individual work stations." Further definition and identification of "work stations," and clarification of the extent to which accessibility is required to those "work stations," must be made in all occupancies, including assembly.

"Back-of-house" areas such as staging and dressing room areas, dugouts, player benches, and judge's booths are generally considered ancillary to the main function of an assembly occupancy. The applicability of ADAAG to these areas, however, depends on whether they are considered "work stations," not on whether they are primary or ancillary to the main function of a structure. ADAAG 4.1.3(1) stipulates that "at least one accessible route complying with 4.3 shall connect all accessible spaces and elements within the building or facility." All areas within an assembly occupancy, both "assembly" and "ancillary" areas, must be connected by an accessible route under current requirements.

Assembly Areas. The proposal limits the assembly area requirements to only those dining and drinking establishments that accommodate more than 100 persons, justifying this occupant load because the model codes use the 100-person trigger. In fact, the BOCA *National Building Code* classifies any such free-standing establishment as a Use Group A-3 Assembly Occupancy, regardless of occupant load, and only permits ". . . a room or space used for assembly purposes by less than 50 persons and which is accessory to another use group . . ." to be classified as other than an assembly space.

Few, if any, assembly area spaces that require dispersed and integrated wheelchair spaces and assistive listening devices will be located in dining/drinking establishments with an occupant load less than 100. Still, this number has no rational basis, and should be deleted from the recommendation. Moreover, the justification suggests that assembly occupancies that are treated as "business" use groups by the model codes should not be subject to the ADAAG Assembly Area requirements. This comment should be deleted as well, as it would suggest that small multimedia conference rooms in office buildings may not have to provide access provisions such as the assistive listening system requirements.

The model code definition of "Assembly Use Group" is misapplied by the contractor to the definition of "assembly areas." Model codes classify the entire building or portions of a building, including performing areas and back-of-house areas, as "Assembly Occupancy." ADAAG's requirements for "assembly areas" were intended to apply only to those portions of an assembly occupancy used for actual public assembly, excluding lobbies, bathrooms, back-of-house, and the like. Therefore, to list within the definition general facility types, such as "ballparks, museums, theme parks," rather than "the seating and field of play in a ballpark, exhibit space within a museum, amusement park ride devices in a theme park," is misleading.

Performing Area. Proposed definition would include movie theater screens as performing areas.

Examples of performing area for each assembly type would be helpful, such as the stage in a playhouse,

the running track in an arena, the gridiron in a football stadium.

Fixed Seating. Use of the term "removable seats" within the definition of "fixed seat" is confusing, although the intent is clear that "fixed seats" include seats that are permanently and temporarily fastened to the structure. Examples of what constitutes "fixed seats" are helpful, albeit wordy; examples of what seating types are not "fixed seats," such as folding chairs, would also be helpful.

4.1.3 Accessible Buildings: New Construction

(19) **Performing and Visual Arts Facilities, Sports Facilities, and Meeting Facilities.** The contractor acknowledges that the research addressed an extremely limited subgroup of those spaces currently subject to the ADAAG Assembly Area requirements, and chose this subtitle as a result. Even in the subgroup of "performing and visual arts facilities," special design features have not been addressed by the research. For instance, the POE's do not address theatres-in-the-round with revolving stages, where horizontal dispersion of wheelchair locations may not be necessary. The subcommittee believes that the diversity and complexity of spaces defined as "assembly areas" cannot be covered by the recommendations of this report, and shares the contractor's reservations regarding applying these findings to all assembly spaces. Accordingly, we hope that the Access Board does not intend to replace the existing ADAAG 4.1.3 and 4.33 requirements with this proposal. Dinner theater restaurants, university lecture halls, and a host of other assembly spaces will fall beyond the scope of the ADAAG access requirements should this proposal be adopted; it is clear that additional research and work will be necessary before the ADAAG Assembly Area provisions are replaced.

(a) Number of Accessible Seats.

(i) The proposed language could be simplified to read as follows:

> "In assembly areas with fixed seating, accessible seating shall comply with the applicable provisions of 4.33 and shall be provided consistent with the following table:"

"General Seating Capacity" should be defined in 3.5 rather than within the scoping language. There is no need to elaborate on the types of accessible seats that must be provided, because they are specified in the table.

Requirements for accessible "moving seating" and amusement ride devices should be "reserved" or "excepted," not both.

The seating categories used for the chart should emphasize the architectural element: that is to say, the type of accessible seating, as opposed to categories of disabilities. "Number of wheelchair spaces" as opposed to "number of spaces for people who use wheelchairs," for example.

Provision of seating for persons with visual impairments should be an operations issue, not a building issue. Modifications of policies, practices, and procedures are stipulated in the DOJ regulations. Moreover, the proposed change suggests clustered seating in what are most often the most exclusive and expensive areas, contrary to the requirement for other accessible seating locations to be dispersed within all price categories. Any requirement for seating for persons with visual impairments should remain outside of ADAAG.

(ii) Private or box seats should not include press boxes. Private or box seats are available for purchase by the general public. Press boxes, however, are not available to the general public, and are areas in which members of the media perform work. Private or box seats should not be counted in the determination of total seating capacity. They should, however, be appropriately scoped to include accessible seating.

(b) Location of Accessible Seats.

(i) Scoping for companion seat is placed inappropriately under this category.

(ii) A percentage derived from empirical data would lend credibility to this proposed scoping criterion.

(iii) Provision of seating for persons with visual impairments, again, should be an operational issue, not an architectural issue. Justification presented for why such seating is necessary attempts to draw a parallel between seating for persons with visual impairments and accessible wheelchair locations. Persons in wheelchairs are prevented from participating in activities at assembly areas by architectural barriers. Persons with visual impairments are prevented from seeing a performance by procedural and economic barriers that may prevent them from sitting close to the performing area. Therefore, modifications of procedures are warranted, not modifications of the built environment. Requirements for modifications in policies, practices, or procedures are found in the Department of Justice regulations, and are inappropriate for inclusion in guidelines for buildings and facilities.

In the "Unresolved Issues" section of the report, the contractor dismisses the concerns that "visually[-]impaired seats" will be abused, by offering an unquantified, anecdotal statement that ". . . facility managers reported that similar abuse of wheelchair spacers currently occurs." This is an apples-and-oranges analogy. Managers can insist that wheelchair locations be occupied by persons sitting in wheelchairs without worrying whether an ambulatory person obtained a wheelchair to gain access to a certain event. Similar assurances cannot be made for visually-impaired seating, where any non-disabled person can claim the "right" to such a seat, even when no visible indicator of the need for such access (e.g., a guide dog, white cane, or thick lenses) is evident.

Additionally, wheelchair locations have traditionally been located in "regular" or substandard seating locations. The only incentive to "abuse" such seating is when the regular seating is sold out. Visually-impaired seats, on the other hand, would provide premium seating for an event, and persons claiming the right to access the 50-yard-line "visually-impaired" seats in an NFL stadium could also claim that the ADAAG 4.33.3 "choice of admission prices" requirement applies, requiring the operator to charge no more than endzone prices for these premium seats. This proposed requirement begs a gross level of abuse that would render the "accessibility" it intends totally meaningless. *Anyone* would be entitled to these seats; and, given the "cheap seat" incentive inherent in the proposal, it is unlikely any visually impaired people would benefit from the required special seats.

(c) Signage

(i) The proposal would appear to better integrate accessible seating locations with the general fixed seating. This requirement, if accepted, should be part of the technical criteria. However, the proposal to regulate "signage" designating seat row, section, or number is an attempt to regulate equipment and furnishings as they are integral to the seat, not the building or structure.

4.1.6 Accessible Buildings: Alterations

Each recommended change should be based on empirical data, presumably the resultant data from the Post Occupancy Evaluation of existing facilities and evaluation of Current Standards and Literature. Justification for each proposed change should be keyed to the applicable portions of Section II, Summary of P.O.E.'s, and Section III, Current Standards and Literature.

It is difficult to comment on many of the changes proposed in this section because they are based on the apparent subjective opinion of the authors rather than on empirical data.

(3) Special Technical Provisions for Alterations . . .

(f)(i) Number of Accessible Seats.

The recommendations allow a number of exceptions where ". . . it is not feasible . . ." to meet the requirements for new construction. Involved in the model codes; developments of requirements for accessible alterations, we are sympathetic to the attempts to craft language that will provide some degree of flexibility to entities undergoing alterations. But "feasibility" is an operator's nightmare and a litigant's dream, and "structural impracticability" may be a better standard to apply to those who would seek an exception to the ADAAG requirements.

4.33 Seating in Performing and Visual Arts Facilities and Sports Facilities

Retaining existing heading in ADAAG is suggested.

4.33.1 Minimum Number

"Performing and visual arts facilities, sports facilities and meeting facilities" are not defined in 3.5.

4.33.2 Wheelchair Spaces

(1) Size of Wheelchair Spaces.

(a) The existing ADAAG provision for T-shaped turns shows a wheelchair turning from a 36"-wide accessible route into a 36"-wide accessible route. Proposed change differs from the existing provision in that a wheelchair user would be turning from a 36"-wide accessible route into a 33"-wide space. The justification, however, does not demonstrate the inadequacy of or the need to change the existing provision for wheelchair spaces.

(b) (i) The justification that the movement of the wheelchair user seated at the interior space of an end-of-the-row wheelchair location inconveniences and disturbs others is insufficient to warrant the prohibition of more than one wheelchair space at such locations. The stipulated aisle accessway width in NFPA 101 invariably causes the disturbance of seated person, regardless of disability.

(ii) Is shoulder-to-shoulder alignment a requisite at all wheelchair seating location?

(c) Why are two adjacent wheelchair spaces not required in assembly areas with 50 or fewer fixed seats? How is the number 50 derived?

General Comment: The lack of relative scale within Figure 47 is misleading.

(2) Location of Wheelchair Spaces.

(a)(i)(1) Use of phrases "can be" and "as permitted" is inappropriate for these standards.

(2) There is no evidence to support the exception of assembly areas from the elevator exemption stipulated in 4.1.3(5), or the exception to the elevator exemption in facilities with less than 1000 seats.

(ii)(1) This proposal requires the dispersal of wheelchair spaces in each horizontal section without the requirement to increase the number of wheelchair spaces, which leaves the designer with a dilemma when "horizontal dispersal" cannot be accomplished without the increase in the number of wheelchair spaces. Is the assembly area then exempt from the "horizontal dispersal" requirement?

(2) This proposal appears to be a "vertical" as well as a "horizontal dispersal" requirement.

(b)(i), (ii), (iii), (iv). There is a general lack of any empirical data to support
the proposed changes to incorporate a variety of requirements for "comparable sightlines" and "vertical integration," as acknowledged by the contractor.

There is a general lack of formatting: definitions, scoping, and technical criteria are all intermixed within this section.

Are "comparable vertical integration" and "enhanced sightlines" mutually exclusive? If so, how is it possible to provide both at one wheelchair space?

During certain events, the requirement for provision of unobstructed views over-the-head of standing spectators could result in an operational nightmare, as well as compromise the safety of wheelchair users. Floor or field seating for concerts is often open for general admission, and seating is usually offered on a first-come, first-served basis. Sometimes "floor seating" at concerts is not really seating at all, but consists of "standing" areas in front of a raised stage. How will these "seating" areas be regulated? A wheelchair user sitting directly in front of a stage that is raised to prevent spectators from climbing up onto the stage would be looking into the stage scaffolding or structure. The pushing and shoving that constantly occur at some concerts could push wheelchair users into the stage or supporting elements.

Typical crowd behavior of standing spectators at a rock concert would necessitate some means of protecting the safety of wheelchair users. Platforms

in standing areas for wheelchair users may not be a viable alternative in many situations. People attempting to climb onto the platform for enhanced view of performers could push others off; structural integrity of a temporary platform could be jeopardized by overcrowding. Platforms will also obstruct the views of spectators to the rear.

(3) Surface at Wheelchair Locations. The design implications of "level floor areas adjacent to side access wheelchair spaces" and how this requirement would work in conjunction with the requirement for enhanced sightlines suggests that vertical integration should be field-tested before any such proposal is adopted. Again, there is a lack of any supporting data for such a requirement. "Level as possible" should be quantified. "Level" should be defined to describe a surface with a slope not exceeding 1:50. This would apply both in outdoor areas and in indoor areas where sloping for drainage is required: e.g., toilet, shower, and locker rooms, exterior walkways and ramp landings.

Wheelchair users in areas where general seating is provided on the ground may compromise the views of other spectators where they are prohibited from using chairs with seat heights above ground level.

Contrary to the assertions made in the report, in most cases it is not simply a matter of choice for those wheelchair users who do not wish to sit on the "hillside" to simply sit in fixed seating locations. Where both types of fixed seating are provided within the same facility, "fixed seating" is usually "reserved" and more costly, as opposed to ground seating areas that are usually "general admission" and less expensive.

4.33.3 Seats for Ambulatory individuals with Mobility Impairments

Proposed title is awkward and lengthy. The 24" seat spacing proposed would increase the seat spacing within the entire row where these "adjustable" seats are located, cause uneven seat spacing within a row, or eliminate the seat in front of these seats to provide adequate "clear leg space," and effectively reduce the number of revenue-generating seats.

The provision of such seating should not conflict with another issue that is discussed in the report, one of "integration," including shoulder-to shoulder alignment. Staggered seating would not facilitate "shoulder-to-shoulder" seating.

The notion that "patrons walking in front of these seats could obstruct sightlines" is irrelevant to accessibility. Patrons walking in front of any seats most always obstruct sightlines for seated spectators, regardless of the types of seats these spectators occupy, unless, of course, these seats have "enhanced" sightlines.

4.33.4 Companion Seating

The proposed 18- to 19-in. seat height is contradicted by requirement (1), which requires companion seats to be "similar" to those provided to the general public, regardless of height. It is also suspiciously similar to the 1970s requirement for watercloset seat heights, and we are at a loss as to where the analogy lies.

There is absolutely no evidence that seats located next to wheelchair locations that are higher or lower than 18 to 19 in. high inhibit the "social interaction" this requirement would pretend to facilitate. Moreover, most regular spectator seats will tall within 1 in. of this specification, and there is no apparent need to further regulate such seating. The proposal assumes that someone in a wheelchair and his/her companion will have a virtually identical stature and torso length, leading to an "eye-to-eye" social interaction. This assumption, and the concept that comparable vertical height (to an inch) is critical to social interaction, are tenuous.

Historically, accessibility standards, building codes, and life-safety codes have not included technical criteria for the design of furniture. Specifying seat heights, "permitting" the use of "folding" chairs within the technical provisions, as opposed to within the advisory language, of ADAAG, is inappropriate.

4.33.5 Access to Performing Areas

"Public routes" are not defined by the contractor. Existing 4.33.5, Access to Performing Areas, adequately addresses the accessible route

requirement between wheelchair seating areas and spaces used by performers.

The proposed provision for access to areas available to the general public should not require ramps or wheelchair lifts to areas like the dugouts in professional baseball stadia. It has been suggested that such access would otherwise be required by ADAAG 4.1.3 (30). This contradiction should be resolved.

This having become a point of contention, the subcommittee questions how an Americans with Disabilities Act that would exempt the entire second story of the Baseball Hall of Fame in Cooperstown, New York from an elevator requirement can be construed to require a full passenger elevator between the locker room, dugout, and playing field of a major league baseball stadium. These recommendations dodge the issue by addressing "public access routes," and do little to resolve this issue.

4.33.6 Access to Seating Areas

The proposed change is already addressed in existing ADAAG 4.3, Accessible Route, 4.8, Ramps, and 4.9, Stairs, and by model building and life safety codes. How are "accessible accessways" different from "accessible routes"?

One of the primary purposes of ADAAG, like all other standards for design and construction of buildings, is to ensure safe, usable buildings and facilities. The requirement for "dispersal" of elevators or ramps based on "convenience" to users, with or without disabilities, is questioned.

4.33.7 Access to Exits

(1) **A minimum of two accessible means of egress shall be provided . . .** Because accessible means of egress must lead to a "public way" (per the definition at ADAAG 3.5), this requirement would require all wheelchair spaces accessed by elevators to also be served by "evacuation elevators" that could serve as exit discharges to the outside of the assembly space. Areas of rescue assistance may serve as "part of" accessible means of egress, but should not be provided *in lieu of* such means of egress. While the subcommittee agrees that elevators should and could serve as the primary accessible means of egress in multi-story structures, we must point out that 100-story buildings are not held to this level of accessible life safety by the current ADAAG.

(2) **. . . Accessible cross aisles shall extend to . . . an . . . area of rescue assistance . . .** This contradicts the requirement of (1) above, which would permit an area of rescue assistance serving a cross aisle serving a wheelchair space only where that area was in turn connected to an accessible means of egress (e.g., an "evacuation elevator" or horizontal exit). An area of rescue assistance is either an "end in itself"—facilitating assisted evacuation—or a part of an accessible means of egress, already covered by the provisions of (1). The recommendations must (1) clarify this disparity, and (2) coincide with the current ADAAG specifications.

4.36 Assistive Listening Systems

(2) It is recommended that "direct audio input cord or shoe" be deleted. Those few persons whose hearing aids have this feature usually have their own cord or shoe; and since there is no standard shoe, requiring a facility to provide them is impractical.

General Comment: A mix of headphones, earbuds, and neckloops will satisfy most users, but only a few silhouettes or stethosets may be required for profoundly hard-of-hearing persons. Perhaps some statement to this effect could be put in the Appendix.

(3) **Areas covered.** The "justifications" section falsely states that ". . . there is no apparent justification . . ." for specifying that seats served by assistive listening systems be within 50 feet of the performing area. In fact, this requirement was meant to facilitate lip-reading of a performer/speaker as a supplement to the assistive listening system. The A117 Committee reaffirmed this accessibility need, and provides an exception only for movie theaters where proximity to the speaker/actor on the screen is not an issue. The contractor should revisit this issue before removing this requirement.

SUBCOMMITTEE PROPOSED CHANGES TO ADAAG

3.5 DEFINITIONS

EXISTING: Accessible Route. A continuous unobstructed path connecting all accessible elements and spaces of a building or facility. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps, and lifts.

PROPOSED: Accessible Route. A continuous unobstructed path connecting accessible elements and spaces of a building or facility. Interior accessible routes include corridors, floors, ramps, elevators, and lifts. Exterior accessible routes include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps, and lifts.

Rationale: Inclusion of quantitative term "all," which denotes "scoping," is misused in Definitions. This implies the construction of accessible routes where not originally intended. Editorially, "may" has no effect on the content. "Clear floor space" is separate from the accessible route and is used as such within ADAAG.

EXISTING: Assembly Area. A room or space accommodating a group of individuals for recreational, educational, political, social, or amusement purposes, or the consumption of food and drink.

PROPOSED: Assembly Area. A room or space accommodating a group of individuals for such purposes as deliberation, exhibition, entertainment, or amusement.

Rationale: The current definition would bring "restaurants" into coverage under the requirements for "assembly areas," yet there is a separate section in ADAAG for "restaurants." Conventionally, only post-secondary "educational" facilities are considered "assembly occupancies," and only where the occupant load exceeds 50 persons, as in college lecture halls. Current definition would include individual classrooms in coverage.

EXISTING: (none)

PROPOSED: Field-of-play. The performing area in a sports facility.

Rationale: This definition is necessary in order to clarify the application of ADAAG. The field-of-play would be equivalent to a performing area in other assembly occupancies, such as the stage in a theater.

EXISTING: (none)

PROPOSED: Fixed Seating. Seating which is built into or mechanically fastened to a facility, including permanently or temporarily fixed, removable, and/or adjustable seating.

Rationale: Clarification of ADAAG coverage.

EXISTING: (none)

PROPOSED: Performing Area. That portion of an assembly area where performances occur, including stages or platforms, arena floors or courts, and playing fields.

Rationale: Clarification of ADAAG coverage.

EXISTING: (none)

PROPOSED: Work Area. That portion of a facility used exclusively by an individual to perform essential job functions.

Rationale: Clarification of ADAAG coverage.

SCOPE

EXISTING: 4.1.2(4) Ground surfaces along accessible routes and in accessible spaces shall comply with 4.5.

PROPOSED: 4.1.2(4) Ground surfaces along accessible routes and in accessible spaces shall comply with 4.5.

EXCEPTION: Field-of-play in sports facilities during play where inherent characteristics of the playing field surface do not meet ADAAG 4.5, including but not limited to ice rinks, sand courts, and grass courts.

Rationale: Requiring special surfaces found in sports venues to meet ADAAG requirement for "stable, firm, slip-resistant" surfaces would fundamentally alter the nature of some sports or would eliminate a sport altogether.

EXISTING: (none)

PROPOSED: 4.1.2(7)(e) [4.1.2(7) . . . Elements and spaces of accessible facilities which shall be identified by the International Symbol of Accessibility and which shall comply with ADAAG 4.30.7 are:] Accessible exits when not all are accessible, and Areas of Rescue Assistance at inaccessible exits.

Rationale: There are no existing requirements in ADAAG or model codes for identification of accessible exits. Exits are required to be marked by 1991 NFPA Life Safety Code for occupants who are ambulatory, in order to facilitate safe evacuation of a structure. Same should be provided for occupants with disabilities.

EXISTING: 4.1.3(8)(a)(ii) Accessible entrances must be provided in a number at least equivalent to the number of exits required by the applicable building/fire codes. (This paragraph does not require an increase in the total number of entrances planned for a facility.)

PROPOSED: 4.1.3(8)(a)(ii) Accessible exits must be provided in a number at least equal to the number of exits required by the applicable building/fire codes. (This paragraph does not require an increase in the total number of exits planned for a facility.)

Rationale: To use "entrances" and "exits" interchangeably is erroneous.

EXISTING: 4.1.3(10)(a) Where only one drinking fountain is provided on a floor there shall be a drinking fountain which is accessible to individuals who use wheelchairs in accordance with ADAAG 4.15 and one accessible to those who have difficulty bending or stooping. (This can be accommodated by the use of a "hi-lo" fountain; by providing one fountain accessible to those who use wheelchairs and one fountain at a standard height convenient for those who have difficulty bending; by providing a fountain accessible under ADAAG 4.15 and a water cooler; or by such other means as would achieve the required accessibility for each group on each floor.)

PROPOSED: 4.1.3(10)(a) Where only one drinking fountain or cuspidor is provided on a floor, that drinking fountain or cuspidor shall be accessible in accordance with ADAAG 4.15. The drinking fountain shall also be accessible to individuals who have difficulty bending or stooping.

Rationale: Cuspidors are provided to prevent the use of a drinking fountain as such, and should be scoped. (Parenthetical information is advisory and should be relocated to the appendix.)

EXISTING: 4.1.3(11) Toilet Facilities: If toilet rooms are provided, then each public and common use toilet room shall comply with ADAAG 4.22. Other toilet rooms provided for the use of occupants of specific spaces (i.e., a private toilet room for the occupant of a private office) shall be adaptable. If bathing rooms are provided, then each public and common use bathroom shall comply with ADAAG 4.23. Accessible toilet rooms and bathing facilities shall be on an accessible route.

PROPOSED: 4.1.3(11) Toilet, Bathing, and Locker Room Facilities

4.1.3(11)(a) If toilet rooms are provided, then each public and common-use toilet room shall comply with ADAAG 4.22. Other toilet rooms provided for the use of occupants of specific spaces (i.e., a private toilet room for the occupant of a private office) shall be adaptable.

Rationale: Provide more complete title of subsection.

EXISTING: (none)

PROPOSED: 4.1.3(11)(b) If bathing rooms are provided, then each public and common-use bathroom shall comply with ADAAG 4.23.

Rationale: Already required in ADAAG sections 4.22 and 4.23. Redundant.

EXISTING: (none)

PROPOSED: 4.1.3(11)(c)(i) If locker rooms are provided, then each public and common-use locker room shall comply with 4.xx.

(ii) Where there are separate bathrooms/changing rooms for male and female users, a third single-use, unisex bathroom/changing room shall be provided and shall comply with 4.xx. Single-use unisex bathrooms/changing rooms shall contain one water closet complying with ADAAG 4.16, one lavatory complying with ADAAG 4.19, one shower complying with ADAAG 4.21, one bench complying with ADAAG 4.35.4, and lockers complying with ADAAG 4.22.5 in a number equal to at least 5% of the number of lockers in either of the men's or women's locker room, whichever is greater. This provision does not require the installation of plumbing fixtures where none were originally intended.

Rationale: Locker rooms are typically found in sports facilities; they may have elements or amenities not found in other toilet/bathing facilities.

An accessible, single-use unisex locker room affords privacy and allows assistance by persons of the opposite sex that are not afforded in single-sex, group locker rooms.

For space and cost reasons, saunas and steam rooms should not be required in unisex rooms, even where provided in the "regular" locker rooms.

Even though the locker room is of single use at any given time, many people who have used the room may be in the sports facility at one time. Thus, more than one locker should be provided.

EXISTING: (none)

PROPOSED: 4.1.3 Saunas and Steam Rooms. If saunas or steam rooms are provided, then each public and common-use sauna and steam room shall comply with 4.yy.

Rationale: Saunas and steam rooms may be located in spaces other than locker rooms, and are thus listed as separate elements.

EXISTING: 4.1.3(18) If fixed or built-in seating or tables (including, but not limited to, study carrels and student laboratory stations), are provided in accessible public or common use areas, at least five percent (5%), but not less than one, of the fixed or built-in seating areas or tables shall comply with ADAAG 4.32. An accessible route shall lead to and through such fixed or built-in seating areas, or tables.

PROPOSED: 4.1.3(18) If fixed or built-in seating or tables, including study carrels and student laboratory stations, are provided in public or common-use areas other than assembly areas, at least five percent (5%), but not less than one, of the fixed or built-in seating or tables shall comply with ADAAG 4.32. An accessible route shall lead to and through the areas containing fixed seating or tables.

Rationale: Clarification of ADAAG Coverage.

EXISTING: (none)

PROPOSED: 4.1.3 Recreational Facilities.

4.1.3 Aquatic Facilities/Natatoria

EXISTING: (none)

PROPOSED: 4.1.3 Swimming Pools. If swimming pools are provided, then each swimming pool shall comply with 4.zz.

TECHNICAL REQUIREMENTS

EXISTING: 4.3.7 Slope. An accessible route with a running slope greater than 1:20 is a ramp and shall comply with ADAAG 4.8. Nowhere shall the cross slope of an accessible route exceed 1:50.

PROPOSED: 4.3.7 Slope. [Existing requirement.]

EXCEPTION: In the case of wet areas such as showers, saunas, pools, or exterior walkways or sidewalks prone to water accumulation, cross slope may exceed 1:50 to the extent required for proper water drainage.

EXISTING: (none)

PROPOSED: 4.xx Locker Rooms.

4.xx.1 Minimum Number. Locker rooms required to be accessible by 4.1 shall comply with 4.xx and shall be on an accessible route.

Rationale: There are no existing requirements in ADAAG. The subcommittee saw a need to make a distinction between locker rooms and "dressing rooms."

EXISTING: (none)

PROPOSED: 4.xx.2 Doors. Doors to accessible locker rooms shall comply with ADAAG 4.13. Doors shall not swing into the floor space required for any fixture.

EXISTING: (none)

PROPOSED: 4.xx.3 Clear Floor Space. The accessible fixtures required in 4.xx.4, 4.xx.5, 4.xx.6, 4.xx.7, 4.xx.8, and 4.xx.9 shall be on an accessible route. An unobstructed turning space complying with ADAAG 4.2.3 shall be provided within an accessible locker room. The clear floor space at fixtures and controls, the accessible route, and the turning space may overlap.

EXISTING: (none)

PROPOSED: 4.xx.4 Water Closets. If toilet stalls are provided, then at least one shall be a standard toilet stall complying with ADAAG 4.17; *where 6 or more stalls are provided, in addition to the stall complying with ADAAG 4.17.3, at least one stall 36 in. (915 mm) wide with an outward-swinging, self-closing door and parallel grab bars complying with Fig. 30(d) and ADAAG 4.26 shall be provided. Water closets in such stalls* shall comply with ADAAG 4.16. If water closets are not in stalls, then at least one shall comply with ADAAG 4.16.

EXISTING: (none)

PROPOSED: 4.xx.5 Lavatories and Mirrors. If lavatories are provided, then at least one shall comply with ADAAG 4.19. If mirrors are provided, at least one shall comply with ADAAG 4.35.4.

Rationale: Mirrors should meet the ADAAG dressing room mirror requirements, not the requirements for mirrors over lavatories, since typically they are in fact used for dressing.

EXISTING: (none)

PROPOSED: 4.xx.6 Controls and Dispensers. If controls, dispensers, receptacles, or other equipment *are* provided, *then* at least one of each shall be on an accessible route and shall comply with ADAAG 4.27.

EXISTING: (none)

PROPOSED: 4.xx.7 Shower Facilities. If single-user shower stalls are provided, then at least one accessible shower stall that complies with ADAAG 4.21 shall be provided. If multi-head gang showers are provided, then at least one accessible shower that complies with ADAAG 4.21 shall be provided immediately adjacent to each multi-head gang shower. Accessible shower stalls may open into gang showers.

Rationale: Gang showers cannot meet the existing ADAAG shower requirements, particularly the grab bar requirements. Requiring ADAAG shower stalls in all accessible locker rooms is necessary to make all amenities usable by persons with mobility impairments.

EXISTING: (none)

PROPOSED: 4.xx.8 Lockers. If lockers are provided, at least five percent (5%), but not less than one, shall comply with ADAAG 4.25.5.

EXISTING: (none)

PROPOSED: 4.xx.9 Benches. If benches are provided, at least five percent (5%), but not less than one, shall comply with ADAAG 4.35.4. Accessible benches shall be located adjacent to accessible lockers.

Rationale: Accessible benches must be adjacent to accessible lockers to accommodate changing clothes.

EXISTING: (none)

PROPOSED: 4.yy Saunas and Steam Rooms.

4.yy.1 General. Saunas and steam rooms required to be accessible by 4.1 shall comply with 4.yy, and shall be on an accessible route.

Rationale: The subcommittee recommends that saunas and steam rooms should be accessible. However, further research is required to develop more detailed requirements for accessible design.

EXISTING: (none)

PROPOSED: 4.yy.2 Doors. Doors to accessible saunas and steam rooms shall comply with 4.13.

EXISTING: (none)

PROPOSED: 4.yy.3 Clear Floor Space. Clear floor space shall be provided at accessible benches and controls.

Rationale: Clear floor space is located next to the accessible bench in order to allow a wheelchair user to transfer to the bench. The wheelchair is then removed to protect it from moisture, and to prevent its metal components from heating to a temperature that could cause burns.

EXISTING: (none)

PROPOSED: 4.yy.5 Bench. Every accessible sauna or steam room shall have a bench or bench section mounted 17 in. to 19 in. above the finished floor or deck. Clear floor space shall be provided adjacent to the bench to allow a person using a wheelchair to make a parallel transfer onto the bench. The structural strength of the bench and attachments shall comply with ADAAG 4.26.3. The bench shall have a slip-resistant surface.

Rationale: A wheelchair user, or other person with a mobility impairment, will most likely transfer to the bench seat.

EXISTING: (none)

PROPOSED: 4.yy.6 Signalling Device. An audible signalling device between the sauna or steam room and a point outside the sauna or steam room shall be provided to permit a sauna/steam room user to indicate a need to exit the room. The operating mechanism of the device shall comply with ADAAG sections 4.27.3 and 4.27.4 and shall be located immediately adjacent to the accessible bench or bench section.

Rationale: Because wheelchairs will typically be removed from the sauna/steam room, a signalling device is essential for the wheelchair user to be able to call for his/her wheelchair and leave the room. It will also serve ambulatory disabled and non-disabled users who may need assistance if staying in the sauna/steam room causes light-headedness or cardiac stress.

EXISTING: (none)

PROPOSED: 4.zz Swimming Pools.

4.zz.1 General. Accessible swimming pools shall comply with 4.zz.

EXISTING: (none)

PROPOSED: 4.zz.2 Water Entry. Means to provide water entry shall be on an accessible route and shall include ramps, lifts, or combination stairs-transfer tiers. At least one means of water entry shall be provided for each accessible swimming pool.

Rationale: Requiring an "accessible route" into the water is not appropriate because stairs and staired transfer tiers cannot meet the "accessible route" definition. Additionally, many pool lifts do not permit the "unassisted operation" ADAAG specifies for wheelchair/platform lifts, and the guidelines should be consistent in what they define as accessible.

Where pool water surface area or pool user capacity exceeds a certain number, two means should be required. Further research is necessary to develop the scoping criteria.

EXISTING: (none)

PROPOSED: 4.zz.3 Ramps. Ramps provided for water entry shall conform to ADAAG 4.8, except:

4.zz.3(1) ramps shall not be limited to 30 in. in maximum vertical rise.

Rationale: Most State codes require multipurpose pool tank depths to be a minimum of 3'-6" (42") (shallow end).

EXISTING: (none)

PROPOSED: 4.zz.3(2) handrails shall not be required to extend beyond the base of stairs or the base of a ramp where such would protrude into a lane or otherwise programmable area.

Rationale: Handrails present a hazard.

EXISTING: (none)

PROPOSED: 4.zz.4 Pool Lifts (Reserved)

Rationale: Pool lifts would meet the ADAAG requirement for means of water entry, but technical specifications for accessible pool lifts are reserved pending further study.

EXISTING: (none)

PROPOSED: 4.zz.5 Stairs and Transfer Tiers. Stairs provided for water entry shall extend from the deck edge to the pool floor and shall comply with ADAAG 4.9, except:

4.zz.5(1) risers shall be permitted to be vertical and without angled nosings.

Rationale: Pool construction practices preclude nosing.

EXISTING: (none)

PROPOSED: 4.zz.5(2) one handrail shall be permitted on either side of the stairs or within the stairs where a minimum 22-in. stair tread width is maintained.

Rationale: Many pool stairs do not have "sides" on which to install handrails, and support is not as critical due to buoyancy. The 22 in. provides adequate passage width.

EXISTING: (none)

PROPOSED: 4.zz.5(3) handrails shall be provided at a height of 17 in. to 19 in. in addition to the requirement of ADAAG 4.9.4(5).

Rationale: This accommodates persons sitting on the treads while transferring into or out of the water.

EXISTING: (none)

PROPOSED: 4.zz.5(4) handrails shall not be required to extend beyond the base of stairs or the base of a ramp where such would protrude into a lane or otherwise programmable area.

Rationale: Handrails present a hazard.

EXISTING: (none)

PROPOSED: 4.zz.5(5) a permanent or movable transfer tier that extends the stair tread/riser configuration to a level 17 in. to 19 in. above the pool deck shall be provided.

Rationale: Continuity of the stair tread/riser geometry should assist in moving the transfer tier up and down.

EXISTING: (none)

PROPOSED: 4.zz.5(6) one handrail in conformance with 4.zz.5(3) shall be provided on one side of the treads/risers.

Rationale: Two handrails (with extensions) rather than one would obstruct transfer to the transfer surface by a wheelchair user.

EXISTING: (none)

PROPOSED: 4.zz.5(7) transfer tiers shall provide treads and a top transfer surface that has a minimum depth of 36 in. and a minimum width of 24 in.

Rationale: 24-in. minimum is derived from the existing ADAAG 4.35.4 bench requirement.

EXISTING: 4.15 Drinking Fountains and Water Coolers

PROPOSED: 4.15 Drinking Fountains, Water Coolers and Cuspidors

Rationale: Cuspidors are provided to prevent the use of drinking fountains as such. Technical, as well as scoping, requirements are proposed.

EXISTING: (none)

PROPOSED: 4.15.6 Cuspidors. Cuspidors shall be mounted with the rim at a maximum of 29 in. above the finished floor, and shall be adjacent to clear floor space conforming to ADAAG 4.2.4.

Rationale: Spout height and knee space are irrelevant where cuspidors are concerned because they are used differently from drinking fountains.

EXISTING: 4.25 Storage

4.25.1 General. *Fixed* storage facilities such as cabinets, shelves, closets, and drawers *required to be accessible by 4.1* shall comply with ADAAG 4.25.

PROPOSED: 4.25 Storage.

4.25.1 General. Fixed storage facilities such as cabinets, shelves, closets, drawers, and lockers required to be accessible by 4.1 shall comply with ADAAG 4.25.

EXISTING: 4.25.2 Clear Floor Space. A clear floor space at least 30 in. by 48 in. (760 mm by 1220 mm) complying with ADAAG 4.2.4 that allows either a forward or parallel approach by a person using a wheelchair shall be provided at accessible storage facilities.

PROPOSED: 4.25.2 [no change]

EXISTING: 4.25.3 Height. Accessible storage spaces shall be within at least one of the reach ranges specified in ADAAG sections 4.2.5 and 4.2.6 (see Fig. 5 and Fig. 6). Clothes rods or shelves shall be a maximum of 54 in. (1370 mm) *above the finish floor for a side approach. Where the distance from the wheelchair to the clothes rod or shelf exceeds 10 in. (255 mm) (as in closets without accessible doors) the height and depth to the rod or shelf shall comply with Fig. 38(a) and Fig. 38(b).*

PROPOSED: 4.25.3 [no change]

EXISTING: 4.25.4 Hardware. Hardware for accessible storage facilities shall comply with ADAAG 4.27.4. Touch latches and U-shaped pulls are acceptable.

PROPOSED: 4.25.4 [no change]

EXISTING: (none)

PROPOSED: 4.25.5 Lockers. All space within accessible lockers shall be within at least one of the reach ranges specified in ADAAG sections 4.2.5 and 4.2.6.

PLACES OF AMUSEMENT SUBCOMMITTEE

DEFINITIONS
PROPOSED GUIDELINES
SECTION 20 - FACILITIES IN PLACES OF AMUSEMENT
SECTION 21 - TEMPORARY AND MOBILE PLACES OF AMUSEMENT
SECTION 22 - AMUSEMENT DEVICES, ATTRACTIONS AND SPECIALTY THEATERS
SECTION 23 - WATER PARKS AND AQUATIC ATTRACTIONS

☞ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

The Places of Amusement subcommittee was assembled of five members chosen from the Recreation Access Advisory Committee. The subcommittee's purpose was to define an area of scope that it would be responsible for the drafting of proposed guidelines for accessibility. The subcommittee's primary focus was Amusement Parks, but included other pay for play type public accommodations.

Along with other subcommittees formed from the ranks of the Recreation Access Advisory Committee, the subcommittee set out to define its area of responsibility under the parameters set forth by the Access Board and Access Board staff. The subcommittee was charged with concentrating on new and permanent construction only, and was informed that its focus was to be on the facility aspects and ADAAG-like, technical recommendations for public accommodations. Due to the large task ahead, work into areas of alteration and alterations of historic places were excluded from the subcommittee's scope. In addition, programmatic accommodation, removal of existing barriers, Title I Employment issues relating to work spaces, and Title III Parts B & C, program issues for policies and procedures, and the provision of auxiliary aids and services, were defined as being outside of the scope of the subcommittee. These were defined as being areas of concern for the Justice Department.

First, the subcommittee set out to define the public accommodations in its scope. This included, but was not limited to: amusement parks, theme parks, water parks, zoos, family fun centers, discovery centers, carnivals, fairs, aquariums, exploratoriums, dinner theaters, entertainment shows, specialty theaters, interactive play environments, exhibitions, and wild animal parks. A listing of the specific facility component was made, and appropriate ADAAG sections or paragraphs were identified that applied to the facility component. Then an evaluation or recommendation was made on the appropriate coverage of ADAAG type scoping and technical design guidelines, or the need for proposed guidelines were noted.

This process was followed by seven additional subcommittee meetings. Each were open to the public, and held in multiple locations in Washington, D.C., California and New York. These subcommittee meetings focused on bringing the group to levels of common understanding, the crafting of proposed guidelines, spirited debate on their technical and practical feasibility, solicitation of raw input and feedback, and of course, numerous redrafts. Concurrent to full committee meetings, the subcommittee would present progress reports on its work, the learning process that the subcommittee went through, and presentation of concepts for proposal.

The public participants included: individuals with disabilities; representatives of amusement parks, theme parks and carnival operations; representatives of amusement attractions, fairs and exhibitions associations; representatives of recreational rehabilitation specialists; representative of the amusement ride manufacturing community; and, general public, and individuals representing other persons with disabilities.

The subcommittee's work divided into four sections: New and Permanent Construction in Places of Amusement - focusing on accessible design for accommodating large numbers of people in these facilities; Temporary and mobile places of amusement - focusing on accessibility to events occurring at different sites, and where the event does generate permanent construction; Amusement Devices, Attractions and Specialty theaters - focusing on accessibility to amusement rides, into the unique facility configurations of attractions or specialty theaters; and, Water Parks and Aquatic Attractions - focusing on accessibility to the components of aquatic recreation and amusement. The subcommittee found that ADAAG contained many applicable sections and rules for the typical facilities and buildings in places of amusement. The subcommittee then focused on those areas identified as unique to places of amusement.

The proposed guidelines are oriented to technical design guidelines that are appropriate for eventual translation into building code type rules. A large variety of conditions and factors occur in the design process of places of amusement, and so the subcommittee attempted not to make restrictive requirements that may work for one condition and not others. There is little repetition of facility elements, unlike other places of public accommodation. In addition, the committee acknowledged that places of amusement do have a fundamental nature with the intent, scope and purpose of the amusement being offered. The proposed guidelines focus on provisions to design accessibility to the amusement, and then leaving the decision to participate in or with it to the person.

A number of areas were identified where the "program" aspect of the public accommodation was very integral to the facility accommodation. Many of the "program" accommodations dealt with the provision of postural control supports when riding an amusement ride, providing cushions to transfer and sit on hard surfaced seats, or reserving seats for people who are deaf while providing view to both the sign language interpreter and the performance. These "program" accommodations were deferred to the Justice Department as potential modifications of policies and procedures sections, and the provision of auxiliary aids sections for Title III Parts B & C.

Some areas of the subcommittee's focus, like water parks, zoos, amusement parks or carnivals, may occur under the auspices of a Title II accommodation. Due to the limited time for the work, this topic was deferred.

A number of areas were identified where these proposed guidelines had common issues, or issues of contrast with other subcommittee's work, and other research projects of the Access Board. The Access Board has conducted a separate research project on assembly uses that affects the facilities in many of the subcommittees' areas of focus. That research project has not been incorporated or reconciled with the proposals herein. Most subcommittees had issue with the requirements of the accessible route criteria, and for places of amusement, such as carnivals or country fairs, some of those requirements are technically or practically infeasible. In contrast, where several subcommittees proposed regulation of quantities of kinds of events, the Places of Amusement subcommittee proposed methods of access to all events, while respecting the fundamental nature of what the event is.

Finally, the subcommittee identified a number of areas where there would be regulatory conflict with certain of the proposed guidelines with building codes and standards such as American Society of Testing and Materials (ASTM) standards, or American Society of Mechanical Engineers (ASME). Many aspects of facilities for recreation are under the jurisdiction of local and State agencies, other than that of building departments and building inspectors. Through the incorporation of these proposed guidelines into ADAAG, which may become adopted in building codes to achieve Justice Department certification, a regulatory conflict may occur. In addition, a number of facilities within the area of recreation have multiple year design and construction schedules. The phasing of proposed rule changes may affect projects under construction today, as well as State codes which may have reached Justice Department certification. These issues need to be reconciled to allow for an orderly implementation of proposed rules for places of amusement.

DEFINITIONS

Accessible Way. Pathways, walks, halls, corridors, aisles, skywalks, tunnels, and other spaces located at sites of temporary events using mobile or temporary structures.

Rationale and Comments: The purpose of this term is to create a definition of a path of travel at temporary events. Such events have to contend with various weather conditions, natural/unimproved/partially improved sites, where ground surface conditions (standing water, mud, gravel...) may be reasonably beyond the operator's control.

This term or others of a similar nature have been proposed by the ski, golf and outdoor recreation subcommittees where site conditions make it impractical for them to meet accessible route criteria of ADAAG 4.5.

Amusement Attraction. Any building, facility, or exhibit around or through which a person or persons may move without the aid of any amusement device integral to the building or the facility, which building, facility or exhibit is for the purpose of amusement, entertainment or education.

Examples include, but are not limited to: Fun houses; audio animatronic theater presentations; interactive play attractions within places of amusement; museums; zoo exhibits; aquariums and planetariums.

Rationale: This would encompass facilities in places of amusement that do not include amusement devices.

Amusement Device. Any static or dynamic device, combination of devices, or elements, which carry, convey or move a person or persons on, along, around, over or through a fixed or restricted course or within a defined area for the purpose of amusement or entertainment, and conveyances used primarily for entertainment or recreational purposes. Factors to consider in determining whether or not a conveyance is primarily used for entertainment or recreational purposes include whether: 1) a state or local government entity requires the conveyance to be inspected as a ride or amusement device; or 2) the primary purpose of the conveyance is for entertainment. Examples of amusement devices include, but are not limited to, one car within a train system; a boat; a flight simulator; a ride vehicle; a go-cart; a waterslide; a horse drawn wagon or a decorative tram car not providing shuttle service.

Rationale: This definition of an amusement device is derived from that found in most state legislation governing amusement rides and devices and the Consumer Product Safety Commission definition.

The term "conveyance used primarily for entertainment or recreational purposes" is used to distinguish amusement devices from transportation vehicles.

The definition of a "tram" in section 1192.3 of the Transportation Guidelines applies to "trams providing shuttle service... between and within amusement parks and other recreational areas." Such trams are not amusement devices.

Amusement Ride System. The sum of all amusement devices, elements, related facilities and operational requirements which make up an amusement ride.

Rationale: The purpose of this is to give definition to the integrated system that makes up an amusement ride. For example, the Amusement Ride System for a roller coaster would be comprised of all of the vehicles (amusement devices), the track, the supporting area and facilities, and safety systems. The amusement ride system for a log flume ride would be comprised of all of the boats, the flume, the water supporting the boats, pumps, safety systems, and the supporting area and facilities.

Animal Containment Facilities. Buildings, facilities and elements of facilities whose primary purpose is to load, unload, house, tie out, exhibit, wash, fit, or groom animals or to provide animal health services. Examples include, but are not limited to, runs, corrals, areas for housing, exhibit and display and pathways between such elements.

Rationale: Animal containment areas are used primarily by animals and their handlers. Doorway widths and heights, accessible routes, paths, slip

resistant surfaces in general, slopes, protrusions, cross slopes and grates are examples of features of animal containment facilities which may deviate from ADAAG requirements in order to handle livestock and assure the handler's safety.

Bridge Plate. A permanent, temporary, or portable device used to span all or a portion of a gap.

Rationale: Bridge plates are referred to in these guidelines as a device used to span the horizontal gap between the load or unload area and the amusement device, or to be used as an emergency evacuation device.

Fixed Seating. Fixed seating is stationary seating which is built into the facility or mechanically fastened to the facility or portion thereof. Fixed seating does not include temporary reviewing stands, or temporary bleachers, furniture, folding chairs or seating in transportation or amusement devices.

Rationale: Amusement device seating has unique design conditions that do not appear in conventional facilities and should not be considered fixed seating. For example, an amusement device seat might be a log flume ride boat seat, carousel horse saddle, or a roller coaster vehicle seat. Amusement device seating is addressed in section 22.0.

Interactive Play Attractions. Amusement attractions where the participant engages in activities such as climbing, crawling, swinging, and sliding which are fundamental to the nature of the amusement experience.

Rationale: These attractions are different from the play equipment covered by the play area settings subcommittee. They often are highly themed structured environments and are considered facilities subject to building codes because they are not simply an assembly of premanufactured individual items. Interactive play attractions have entries and exits, designed for efficient and safe circulation of people through the attractions.

Load/Unload Area. The designated primary area where a person embarks or disembarks an amusement device or attraction.

Rationale: Load and unload areas may include platforms.

Mobile. That which is regularly mounted on wheels, such as trucks trailers, wagons, vans, dollies and similar vehicles, and is relocated from place to place with or without assembly.

Rationale: This definition is needed to describe amusement rides or attractions which are mounted on wheels and are not covered by ADAAG. These are not new constructions or alterations as referenced in ADAAG, and are covered by the regulations of Title III Parts B & C.

Queue. The designated route for ingress or egress from the load/unload area of an amusement device, attraction or specialty theater; a designated area where people wait in line.

Rationale: Queues are areas designed to facilitate the safe, orderly flow of large crowds of people into an amusement device or attraction. They may use lane separations such as fencing, planting, ropes, stations, railings or other barriers.

Specialty Theater. Any building or facility where a live, filmed, mechanical, electronic or other presentation occurs where the design of the building or facility, or components thereof, are fundamental to the nature of the presentation. Examples include but are not limited to 360 degree film theaters spherical projection theaters, motion simulator theaters, and virtual reality displays.

Rationale: Specialty theaters have unique architectural or amusement features, designed to provide the viewer unobstructed immersion into the audio-visual experience, which require special technical guidelines. Examples of these features could include: tiered seating for clear sight lines, curved projection screens, and clustering of wheelchair spaces on accessible levels to provide appropriate lines of sight.

Temporary. Ninety (90) days or less.

Rationale: A definition is needed to describe events of limited duration to facilitate the establishment of technical guidelines for the unique features of

temporary events. 90 days was chosen because applications of building codes almost universally require that a structure exist for more than 90 days to be covered by the building codes as permanent new construction or alteration.

PROPOSED GUIDELINES

1. Purpose

Set forth herein are recommended guidelines for accessibility to newly constructed places of amusement for individuals with disabilities. All newly constructed places of amusement are required to be accessible in accordance with these guidelines.

Places of amusement include, but are not limited to, amusement parks, theme parks, water parks, zoos, family fun centers, discovery centers, carnivals, fairs, aquariums, exploratoriums, dinner theaters, entertainment shows, specialty theaters, interactive play environments, exhibitions, and wild animal parks.

2. Safety Requirements

Places of amusement may impose legitimate safety requirements that are necessary for the safe operation of an amusement device, attraction or specialty theater.

Rationale: Derived from Section 36.301(6), Title III.

3. Provisions for Adults

The specifications in these guidelines are based upon adult dimensions and anthropometrics. If the amusement device, attraction, or specialty theater is designed primarily for use by children, deviation from the requirements of these guidelines is permitted to accommodate size and anthropometrics of the intended child users. For example, dimensions of handrails, wheelchairs, securement devices, and space requirements may vary as appropriate to the age group to the intended child user.

Rationale: Derived from ADAAG 2.1.

4. Provisions for Wheelchairs

The specifications in these guidelines are based on the dimensions and configuration of a 4 wheel, adult sized, non-powered wheelchair (see ADAAG Appendix, Figure A3).

SECTION 20 - FACILITIES IN PLACES OF AMUSEMENT

20.0 FACILITIES IN PLACES OF AMUSEMENT

20.1 PURPOSE

This section sets forth recommended guidelines for accessibility to new construction of facilities within places of amusement for individuals with disabilities.

Rationale: Places of amusement may contain some facility types that are adequately covered by scoping or technical criteria within ADAAG. The subcommittee concentrated on those functions and areas not adequately or currently addressed in ADAAG.

In addition, the subcommittee was directed to concentrate on new construction only, and on those areas that dealt with design issues for buildings and facilities, and not the programs, policies, practices, procedures or auxiliary services or aids at places of amusement.

20.1.1 Application. New construction of facilities within places of amusement shall comply with the requirements of these guidelines.

a. New construction of facilities within places of amusement shall comply with ADAAG unless otherwise provided herein.

b. Areas of buildings or facilities not intended for, or used by, the general public, are not required to be accessible to the public, and ADAAG 4.33.5 shall not apply.

Rationale: This exception applies only to areas that are not intended for access by the public. Access by the public is not required between public areas and areas used only by employees as work or performance areas, where the general public is not

directly involved in the performance. Such areas include, but are not limited to, stages for performers only, spaces that are only used by service personnel for repair and maintenance purposes, display cases, and areas where animals are contained at zoos. Areas used by employees are adequately addressed by Title I and ADAAG 4.1.1(3).

20.1.2 Alterations to Existing Sites. The addition of facilities, or amusement attractions to an existing place of amusement is an alteration per ADAAG 4.1.6.

Rationale: In places of amusement, facilities such as restrooms, drinking fountains and telephones are shared among multiple facilities or attractions. Consequently, the path of travel requirements and other related requirements of ADAAG 4.1.6 would apply.

20.2.1 Accessible Routes. At least one accessible route, which complies with ADAAG 4.3 unless otherwise modified herein, shall be provided.

a. The accessible routes may include platform lifts (wheelchair lifts) in compliance with ADAAG 4.11, as modified herein.

Rationale: Use of a lift would provide greater access to certain facility configurations where it would not be feasible to ramp changes in level. For example, lifts could be used to provide access where it would be difficult to bridge over a body of water. This section is not intended to supersede ADAAG accessible route criteria.

b. If the platform lift is used for a change in level greater than 30 inches, the lift shall accommodate one person in a wheelchair and a companion standing or occupying a fold down companion seat.

Rationale: Most state safety codes prohibit companions on lifts.

However, members of the National Council on Independent Living requested a provision requiring that the lift accommodate one standing or seated companion to ensure that families would not be separated where visual contact with their children cannot be maintained. This request was supported by a places of amusement subcommittee survey of individuals with disabilities.

c. Places of amusement having platform lifts may use key pad access code devices to operate the lift.

Rationale: Use of key pad access controls can avoid the problem of lost keys with key operated controls and may also limit damage which occurs from tampering.

20.2.2 Ground Surface Textures on Accessible Routes. Ground surface textures on accessible routes shall comply with ADAAG 4.5 except as modified herein.

Rationale: The purpose is to permit themed surfacing materials like flag stone, cobble stone, wood decking, cast in place river pebbles, stamped concrete and other patterned finishes. Technical criteria is derived from ADAAG 4.5.

a. Changes in level between 1/4 inch and 1/2 inch height shall be beveled or rounded with a slope no greater than 1:2, and have an adjacent accessible path complying with ADAAG 4.5.

Rationale: This slightly modifies ADAAG 4.5.2 to permit rounded edges as well as beveled edges. This paragraph would allow cast in place river pebbles and other accessible route materials.

b. Changes in level greater than 1/2 inch are permitted in paving and surface textures, and shall have an adjacent accessible route complying with ADAAG 4.5.

Rationale: This section would allow cobble stone streets and other historically themed paving materials, while requiring an adjacent accessible route having a more flush surface treatment.

20.2.3 Gratings. ADAAG 4.5.4 shall apply to gratings if used as walking surfaces. They shall have spaces no greater than 1/2 inch (13 mm) wide in the direction of travel (see ADAAG Fig. 8(g)). Diamond and oval slots are permitted and may be a maximum of 3/4 inches long by 1 1/2 inches wide.

Rationale: The diamond shape is standard expanded mesh or punched checker plate grating. This material is commonly used in themed show spaces. Also, the material is frequently used for mobile amusement park rides to reduce material weight, and to provide walking surface drainage and traction.

20.2.4 Areas Primarily Used by Animals. Animal containment facilities are exempt from the requirements of ADAAG sections 4.2, 4.3, 4.4, and 4.5.

Rationale: Doorway widths and heights, routes, paths, surfaces, textures, slopes, protrusions, cross slopes, and grates are designed to insure the health, safety, and welfare of livestock and handlers. Construction to allow accessibility under ADAAG requirements would endanger both livestock and handlers and adversely affect the primary function of these facilities.

20.3 ACCESSIBLE PARKING.

Accessible parking for places of amusement shall comply with ADAAG 4.1.2.(5)(a), unless otherwise provided in this section.

20.3.1 Designated Accessible Parking Areas. In lieu of ADAAG 4.6.2, accessible parking may be located in designated lots or parking areas.

a. Designated accessible parking areas shall be located on the shortest accessible route of travel to the facility's accessible entrance or to transportation stops where other forms of accessible transportation are provided to and from the accessible entrance.

b. Where accessible parking is located in designated lots or areas, the signage indicating the lot as reserved for accessible parking may be located at the entrances to the lot, in lieu of a sign at each parking space.

c. The signage indicating the direction of the designated accessible parking lot or area may be portable.

Rationale: This section allows for designated parking areas and related modification to the signage provisions in ADAAG 4.6.4. Each individual space need not be signed as accessible when the entire lot is designated as accessible parking only. Multiple designated areas may be used in large parking facilities, or where a large facility has multiple entrances.

20.3.2 Parking and Passenger Loading Zones, Signage. Signage for parking not in designated lots or areas and for passenger loading zones shall be provided per ADAAG 4.6, unless otherwise modified herein.

a. In lieu of ADAAG 4.6.4, two adjacent accessible parking spaces may share one sign indicating the spaces as reserved for accessible parking, when the two spaces do not share a common pedestrian access aisle.

Rationale: An additional graphic may be added to the sign which diagonally points downward to the two spaces. This would remove the need for signage poles from drive through parking spaces and is consistent with ADAAG criteria allowing two spaces to share an access aisle.

c. If continuous attendant services are provided directing individuals to marked accessible parking spaces, signage per ADAAG 4.1.2(5)(a) is not required to designate the spaces.

Rationale: The parking procedures for places of amusement are often managed by attendants directing the flow of traffic. Those requesting accessible parking are often given some identifiable pass which alerts the attendant to direct them to a designated accessible space. The attendant also monitors the parking to prevent use by those not presenting the identifying pass.

20.4 Wheelchair Locations in Specialty Theaters, Amusement Devices and Amusement Attractions

20.4.1 Application. Specialty theaters, amusement devices, and amusement attractions, and their queues, load and unload areas, and preshow and post show areas, are not assembly areas governed by ADAAG sections 4.1.3(19) or 4.33, and instead are governed by the requirements set forth herein.

Rationale: The facility design and operations of specialty theaters, amusement devices and amusement attractions, and their related ingress and egress facilities as set forth herein, create unusual, nonstandard situations which are not appropriately addressed in ADAAG 4.33 which governs assembly areas in conventional facilities such as stadiums, arenas, theaters, meeting rooms, restaurants and bars.

20.4.2 Wheelchair Locations, Amusement Devices and Amusement Attractions. Wheelchair locations in amusement devices and amusement attractions shall comply with Section 22.0 herein.

20.4.3 Wheelchair Locations - Specialty Theaters. Wheelchair locations in specialty theaters having fixed seats shall be provided consistent with the following table:

Capacity of Seating in Specialty Theater	Number of Required Wheelchair Locations
4 to 25	1
26 to 50	2
51 to 300	4
301 to 500	6
over 500	6, plus 1 additional space for each total seating capacity increase of 100

Rationale: This tracks ADAAG 4.1.3(19) (excluding the incorporation of sections 4.33.2, 4.33.3 and 4.33.4), to provide guidelines more appropriate for specialty theaters. Note that other proposed guidelines herein also address the unique requirements of specialty theaters (e.g. dual sloped floors, handrails in access aisles, assistive listening systems), and this proposed section 20.4.3 should be considered in context with these other requirements.

a. Each wheelchair location shall provide minimum clear ground or floor spaces as shown in ADAAG Fig. 46. The wheelchair location shall not overlap an accessible route or any path of egress.

b. Wheelchair locations shall be an integral part of any fixed seating plan to provide persons with disabilities a choice of sight lines comparable to those for other members of the general public.

Rationale: Specialty theaters (like movie theaters) do not have multiple admission prices, so ADAAG's disbursement according to choice of admission prices is not applicable. Therefore, the intent is to provide disbursement for a variety of lines of sight.

c. Clear Floor Space. Each wheelchair location shall have the minimum clear ground or floor space shown in ADAAG Fig. 46 and shall have level ground or floor space complying with ADAAG 4.5.

d. Wheelchair locations shall be horizontally dispersed directly on accessible routes. When seating exceeds 300, wheelchair spaces shall be provided in more than one location. Readily removable or adjustable seating may be installed in wheelchair spaces when the spaces are not required to accommodate wheelchair users.

e. Wheelchair locations shall have at least one companion seat, which may be fixed, folding or adjustable. Where feasible, companion seating shall be placed in shoulder to shoulder alignment with the person using a wheelchair, but in some conditions, companion seating may need to be placed in tandem. To the maximum extent feasible, wheelchair locations shall be paired with another wheelchair location or a wheelchair location shall be paired with a side transfer seat.

Rationale: Folding or adjustable seating provides for greater accessibility by serving as transfer seating, expanded wheelchair locations and the like.

f. Wheelchair locations shall adjoin an accessible route that also serves as a means of egress in an emergency.

g. Floors in specialty theaters with fixed seating may exceed a 1:12 slope ratio, and specialty theaters may also have tiered seating where necessary due to the fundamental nature of the amusement experience being provided. Where seating is tiered, steps may be provided in aisleways.

Rationale: Specialty theaters involve a concept of entertainment called "immersion" into the audio visual experience, which requires minimizing of visual barriers between the viewer and the screen. This can only be achieved by having steeply raked floors that aid in elevating seating above the row of seats in front of the viewer.

h. Accessible viewing positions may be clustered for areas having sight lines that require floor slopes of greater than 5 percent. Equivalent accessible viewing positions may be located on accessible levels. Where there are more than 4 wheelchair locations, they shall be disbursed in pairs on the accessible level.

Rationale: This tracks ADAAG 4.33.3, Placement of Wheelchair Locations.

i. Where transfer seats are dispersed along aisles having slopes greater than a 1:20 ratio, a handrail need be provided on one side only and shall not conflict with doorways, or exit ways, or sight lines.

j. Handrails are not required at aisles having steps or stairs, or where there is seating on both sides of the aisle. A gripping surface shall be provided on one side of the aisle, which does not conflict with entrance and exit paths, to enable people to support themselves.

Rationale: Transfer seats may be dispersed on aisles having slopes and steps. Providing continuous handrails as required by ADAAG sections 4.8.5 and 4.9.4 is not feasible because of fire safety issues; continuous handrails would block aisles, egress paths and side exit doors.

20.4.4 Dual Sloped Floors. Dual sloped floors are permitted in specialty theaters, and preshow, lobby or entry areas to specialty theaters where the entry doors into the theater are at differing elevations from one another.

Rationale: These dual sloped floors largely occur in the lobby or pre-show areas, to the side of the theater, because the doorways into the theater are aligned to funnel people directly into theater aisles. (Pre-show areas are places where people are entertained while waiting to enter the main show or attraction.) Because the theater seating floor is sloped for sight line views, these doors are positioned at varying elevations to correspond to the theater floor slope. The lobby area is therefore a very wide ramp with slopes parallel to the theater floor slope, and may have cross-sloping depending on how people transverse the space.

a. Level landings shall be provided on both sides of each door leading into a specialty theater where dual sloped floors occur per ADAAG Fig. 25 and Fig. 26.

Rationale: This is to allow people using wheelchairs to operate door mechanisms, by providing a flat surface where the wheelchair can be stationary.

b. Floor slopes shall not exceed a 1:16 ratio in any one direction, and shall provide level landings for each 24 inches in rise.

Rationale: It would be difficult to design a theater which provides acceptable sight lines and side door loading without the slope exceeding ADAAG criteria for slope and cross-slope. A 1:16 slope ratio and a 24 inch rise provides for a more gradual grade elevation change to the side entry doors. The level landings provide areas for people using wheelchairs to rest.

20.5.1 Assistive Listening Systems. Assistive listening systems shall be provided for amusement attractions and specialty theaters having fixed seating per ADAAG 4.1.3(19)(b) except as modified herein.

Rationale: Similar to ADAAG 4.1.3(19)(b).

a. Where a facility has multiple amusement attractions, specialty theaters or conventional theaters having fixed seats, and the public cycles from location to location, receivers provided for one location may be used in other locations that have

compatible assistive listening systems. The required number of assistive listening receivers shall be 1% of the total number of fixed seats in the locations where assistive listening systems are required.

Rationale: In amusement parks, guests circulate through the various park attractions, and because the shows are repeated throughout the day, they have multiple opportunities to visit each location. Within a park, receiver types generally are standardized. The incidence of use of assistive listening system receivers is actually much less than the 1% of the total quantity of fixed seats required here.

b. If the assistive listening systems provided are permanently attached to individual fixed seats, then such seats shall be located within a 50 foot viewing distance of the stage and shall have a view of the stage which is comparable to that of other guests.

20.5.2 Location of Assistive Listening Devices and other Auxiliary Aids or Devices. Assistive listening devices and other auxiliary aids may be provided in one or more centralized locations, in lieu of placing them at each facility where assistive listening systems are provided.

Rationale: A place of amusement may have multiple facilities where assistive listening systems are provided. Providing a centralized distribution system for disbursement of receivers would allow people to check one out for the day, and not have to seek devices at each facility.

Typically, the receivers would be provided at the Guest Services office or booth near the entry of the park, to allow for centralized management, storage, distribution, collection, maintenance and hygienic cleaning before re-distribution.

20.5.3 Signage. One sign providing information about auxiliary aids and services and assistive listening systems must be provided for each bank of ticket windows or each bank of entry gates at places of amusement.

Rationale: Places of amusement provide signage indicating admission prices, times of operation and other information needed by the public about its services at the front entrance to the facility as a whole. This rule recognizes that providing signage in a central area is the best way to communicate with the public about auxiliary aids and services. In addition, places of amusement often have a guest guide or handbook which also describes the facilities and activities, and the accessible features of the facility.

20.9 POINTS OF SALE

In multiple lane, fast food restaurants, points of sale or cash register stations placed before food pick-up areas shall have one station that shall be in conformance with ADAAG 7.2 and have an accessible aisle 36" wide.

20.10 INTERACTIVE PLAY ATTRACTIONS IN PLACES OF AMUSEMENT

Interactive play attractions in places of amusement are not subject to the guidelines for new construction in play settings.

Rationale: The play area settings subcommittee has proposed guidelines for playgrounds and play equipment. Due to the fundamental differences between the scope of the proposed guidelines for playgrounds and play equipment, and places of amusement, recommendations of the play settings subcommittee do not apply.

Interactive play attractions in places of amusement are different from the play equipment covered by the play area settings subcommittee. They often are highly themed structured environments and are considered facilities subject to building codes because they are not simply an assembly of premanufactured individual items. Interactive play attractions have entries and exits, designed for efficient and safe circulation of people through the attractions.

20.10.1 Accessible Route. An accessible route shall connect all accessible play experiences within the interactive play attraction.

20.10.2 Other Circulation Methods. Where ladders, ropes, cargo nets or other climbing and crawling structures are integral to the interactive experience they are not required to be part of the accessible route.

SECTION 21 - TEMPORARY AND MOBILE PLACES OF AMUSEMENT

21.0 TEMPORARY AND MOBILE PLACES OF AMUSEMENT ON EXISTING IMPROVED AND UNIMPROVED SITES

21.1 PURPOSE

This section sets guidelines for accessibility to temporary and mobile places of amusement on existing improved and unimproved sites for individuals with disabilities. Temporary and mobile amusement devices, attractions and specialty theaters, shall comply with the requirements of section 22, Access to Amusement Devices, Attractions and Specialty Theaters to the maximum extent feasible without fundamentally altering the nature of the amusement ride system or experience. New and permanent construction on a site shall comply with the requirements of section 20.0, Facilities In Places of Amusement, to the maximum extent feasible. Assembly and disassembly of mobile and temporary amusement devices and attractions shall not constitute new construction or alteration.

Rationale: Mobile amusement devices are subject to Federal Motor Carrier Regulations and their assembly does not typically require a building or occupancy permit. See also rationale for section 22.3.1.

21.2 ACCESSIBLE ROUTE OR ACCESSIBLE WAY

At least one accessible route or accessible way shall connect accessible buildings, facilities and elements. Examples of conditions which permit the utilization of an accessible way may include, but are not limited to, circumstances in which the changes required to comply with ADAAG sections 4.2, 4.3, 4.4 and 4.5 would result in changes to topography or surface conditions inconsistent with the primary purpose of the site of a temporary event.

Rationale: Weather conditions such as sleet, hail, rain and snow as well as certain natural topographical and soil conditions may result in a surface of an unimproved or partially improved site that is not firm, stable, or slip resistant. Site preparations and alterations should not be required if such would result in changes to the topography or surface conditions inconsistent with the primary purpose of this site. An example would be a carnival or fair on a wheat field, an athletic field, or a park facility. There are instances where it would be undesirable to modify a site if the attributes of the site were selected as part of the theme of the event. An example would be a blue grass festival set in a wooded or landscaped setting with seating on the ground.

21.2.2 The accessible way shall comply with ADAAG 4.4. However, where the accessible way is 10 feet in width or greater, its boundaries need not comply with ADAAG 4.4.

Rationale: Tents are frequently used in connection with temporary events. It is necessary to anchor tents with tent stakes. If the accessible way is 10 feet in width then the presence of tent stakes on the perimeter of the accessible way should not be considered a protrusion.

21.3 ACCESSIBLE PARKING

Where parking is provided at a temporary event, the parking areas shall comply with section 20.3 unless otherwise provided in this section.

Rationale: It would not be feasible to require the paving of a site for accessible parking if the event is temporary in nature. The primary use of the site may not be for parking, and may not include paving, such as a public park, farm field, play lot or the like.

1. Accessible parking may be located in designated lots or areas on the shortest accessible route to the facility's entrance.

Rationale: This section requires the location of the accessible parking to be as close to the facility entrance as possible.

2. Lots may be designated with temporary barriers such as fencing, saw horses, taped barriers, chalk or the like.

Rationale: Designating the parking area with temporary barriers and permitting the users to be directed to the parking by parking attendants will allow flexibility and insure that parking is as close to

the facility entrance as possible. The attendant will allow flexibility and insure that parking is as close to the facility entrance as possible. The attendant also monitors the parking to prevent use by those not presenting the identifying pass. The use of temporary signage is consistent with the temporary nature of the event.

3. Signage which complies with ADAAG 4.6.4 or temporary signage shall be provided. This signage shall indicate that the lot or area is reserved for accessible parking only and shall be located at the entrance to the lot or area.

4. If continuous attendant services are provided directing individuals to a marked accessible parking space, signage per ADAAG 4.1.2(5)(a) is not required to designate the space.

21.4 TEMPORARY PARKING OR PASSENGER LOADING

a. Where temporary passenger loading zones are provided, passenger loading space shall be temporarily marked and temporary signage shall be provided in accordance with section 20.3.2.

The temporary marking may be done with chalk, ribbon material or other temporary markings.

Rationale: Temporary passenger loading zones should be permitted at temporary events to assure the location of such passenger zones as close to the facility entrance as possible.

21.5 BRIDGING HORIZONTAL GAPS OR CHANGES IN LEVEL

1. The requirements of section 22.3.4 shall apply to the maximum extent feasible.

SECTION 22 - AMUSEMENT DEVICES, ATTRACTIONS AND SPECIALTY THEATERS

22.0 AMUSEMENT DEVICES, ATTRACTIONS AND SPECIALTY THEATERS

22.1 PURPOSE

This section sets guidelines for accessibility to amusement devices, attractions and specialty theaters for persons with disabilities. All newly constructed amusement devices, attractions and specialty theaters are required to be accessible in accordance with these guidelines.

22.1.2 Format of this Section. Set forth below are guidelines for access to amusement devices for individuals who use mobility aids or wheelchairs; where wheelchairs can be accommodated on the amusement device (section 22.3); or where accessibility is accomplished by transfer to an amusement device (section 22.4).

22.2 ROUTE TO AMUSEMENT DEVICE, ATTRACTION, OR SPECIALTY THEATER

22.2.1 Route to Amusement Device, Attraction or Specialty Theater. To the maximum extent feasible, the route to the load area or entrance shall be an accessible route which complies with ADAAG 4.3, and to the maximum extent feasible coincide with the route of the general public. Where the route of the general public is not the accessible route, an alternate accessible route shall be provided. An alternate accessible route may include, for example, loading and unloading at the same location, either at the load or unload area.

Rationale: An example of where it would be appropriate to provide an alternate accessible route is where an amusement ride system requires that persons board on one side of an amusement device (load) and disembark from the other side (unload), with a track or waterway separating those areas. Unless a person transferring from a wheelchair is permitted to board from the unload side, his/her wheelchair will be left on the wrong side for disembarking.

22.2.2 Load or Unload Areas that are In Motion. Moving walkways, rotating turntables, or other similar devices at the load or unload area are permitted as part of the accessible route. Amusement devices that use load or unload areas that are in motion are not required to meet the firm and stable surface requirements of ADAAG 4.5.

Rationale: Moving walkways, turntables and other similar devices are typically used to provide access to continuously moving amusement devices. Having to stop one amusement device in the amusement ride system would in turn stop all of the other amusement devices already dispatched. This would introduce interruptions into the amusement experience causing disruption of show synchronization. This may then require a complete recirculation of all amusement devices and a complete restart of the entire experience.

22.3 WHEELCHAIR ACCESS TO AMUSEMENT DEVICES

22.3.1 Scoping. Where it is feasible for a person to remain in a wheelchair on an amusement device without fundamentally altering the nature of the amusement ride system or experience, at least one wheelchair space on one amusement device within the amusement ride system shall be available. For example, in a ride where the amusement ride system is comprised of 3 cars, one wheelchair space should be provided on one of the 3 cars.

Rationale: This section requires that at least one wheelchair space be provided per amusement ride system where it is feasible to do so without fundamentally altering the nature of the amusement ride system or experience. One wheelchair space is recommended because amusement device cycles typically range from 90 seconds to 15 minutes. Due to this frequency of amusement device cycles, a high volume of people who use wheelchairs can be accommodated each hour as compared to a conventional motion picture theater that has a cycle time of 90 minutes.

It is not possible to set specific criteria for when an amusement device can or cannot accommodate a person in a wheelchair on the amusement device because of the numerous factors involved in amusement device design. Examples of these factors include, but are not limited to:

1. seating space and configuration;

2. ride speed;

3. forces and accelerations involved during normal and emergency operation;

4. riding posture and center of gravity;

5. restraining system;

6. sight lines; and

7. safety of others.

It may not be feasible to accommodate a person in a wheelchair on an amusement device such as a looping roller coaster, for example, because the use of a wheelchair may raise a person's center of gravity, thus altering the point on the body of the person using the wheelchair which will be most affected by the dynamic forces of the ride. The presence of a wheelchair on a ride device may also create instability on some amusement devices such as a raft ride.

Mandating a percentage of amusement devices that can accommodate a wheelchair is not appropriate because no two amusement devices are alike (unlike water fountains or counter tops). Moreover, even if a person cannot remain in a wheelchair while on an amusement device, the device will be accessible by means of transfer.

The phrase "fundamentally alter the nature of" found in Title III section 36.302 and Title II section 35.150, applies to the provision of goods, services and facilities and therefore is applicable to an amusement experience. The nature or mix of goods that the places of amusement should provide (such as mix of type of rides or attractions), is a program issue under section 36.307, 28 CFR Part 36 and is not appropriate for discussion in these guidelines.

22.3.2 Wheelchair Access onto Amusement Devices. To the maximum extent feasible without fundamentally altering the nature of the amusement ride system or experience, wheelchair access onto amusement devices shall be accomplished in accordance with section 22.3:

22.3.2.1 Clear Width of Boarding Lane. In the loading or unloading areas, the boarding lane provided for wheelchair access to the amusement

device having lane separators shall be no less than 32" wide.

Rationale: 32" is consistent with door width requirements for buildings, and door (ADAAG 4.13.5) and aisle width requirements for transportation vehicles. Some amusement device systems have boarding lanes to manage the public at the boarding location to the amusement device. These may have guard rails, hand rails, gates, walls or other forms of physical barriers and/or floor markings to help guests organize themselves for timely and safe boarding onto the amusement device. In some situations, these are designed to provide separation so that guests cannot circulate along the edge of the load or unload area or in close proximity to the amusement device. Size and weight constraints dictate that most amusement devices have narrow seating rows. The boarding lanes must be aligned with, and must have a width equal to, the width of the amusement device seating row in order to facilitate safe and orderly boarding.

22.3.3 Wheelchair Turning Space. A wheelchair turning space shall be provided in the load or unload area and shall comply with the specifications listed below. The wheelchair turning space is not required to be on board or adjacent to the amusement device. For example, the turning space may be outside of the boarding lane as depicted in Figure 22.3.3C. A wheelchair turning space shall be 60 inches (1525 mm) in diameter (see Figure 22.3.3A), or a T-shaped space (see Figure 22.3.3B).

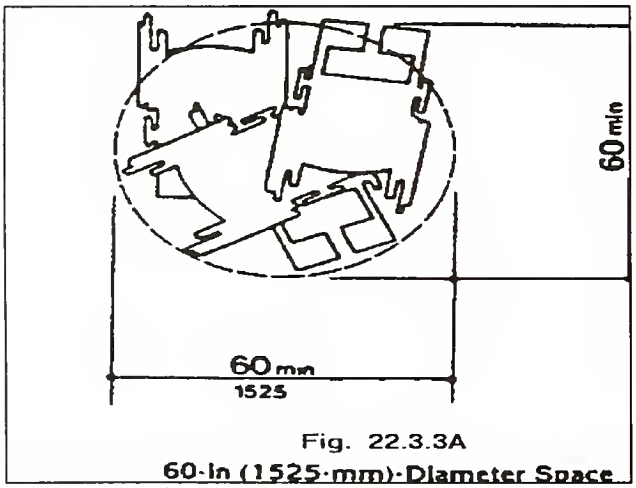

Figure 22.3.3A

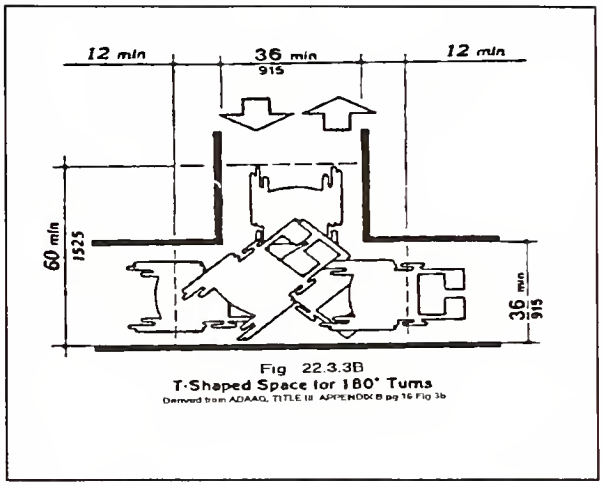

Figure 22.3.3B

Rationale: Frequently, boarding lanes having alignment to the amusement device entry points are utilized for crowd control. Placing a wheelchair turning space immediately adjacent to an amusement device may impede a person using a wheelchair from having a clear view of the amusement device loading procedure, having adequate maneuvering space, or having an "out of traffic" place to ready themselves and their companions for loading onto the amusement device.

For amusement devices that have provisions for wheelchairs, the floor surface areas near the amusement device may need to remain clear for the operation or maneuvering of ramps, bridge plates, or lifts. In addition, amusement devices typically must operate within stringent weight and size constraints which limit the space available for turning spaces on board the amusement device.

The requirements of this section exceed the requirements of Transportation Guidelines, section 1192.23, which does not require a maneuvering space on transportation vehicles.

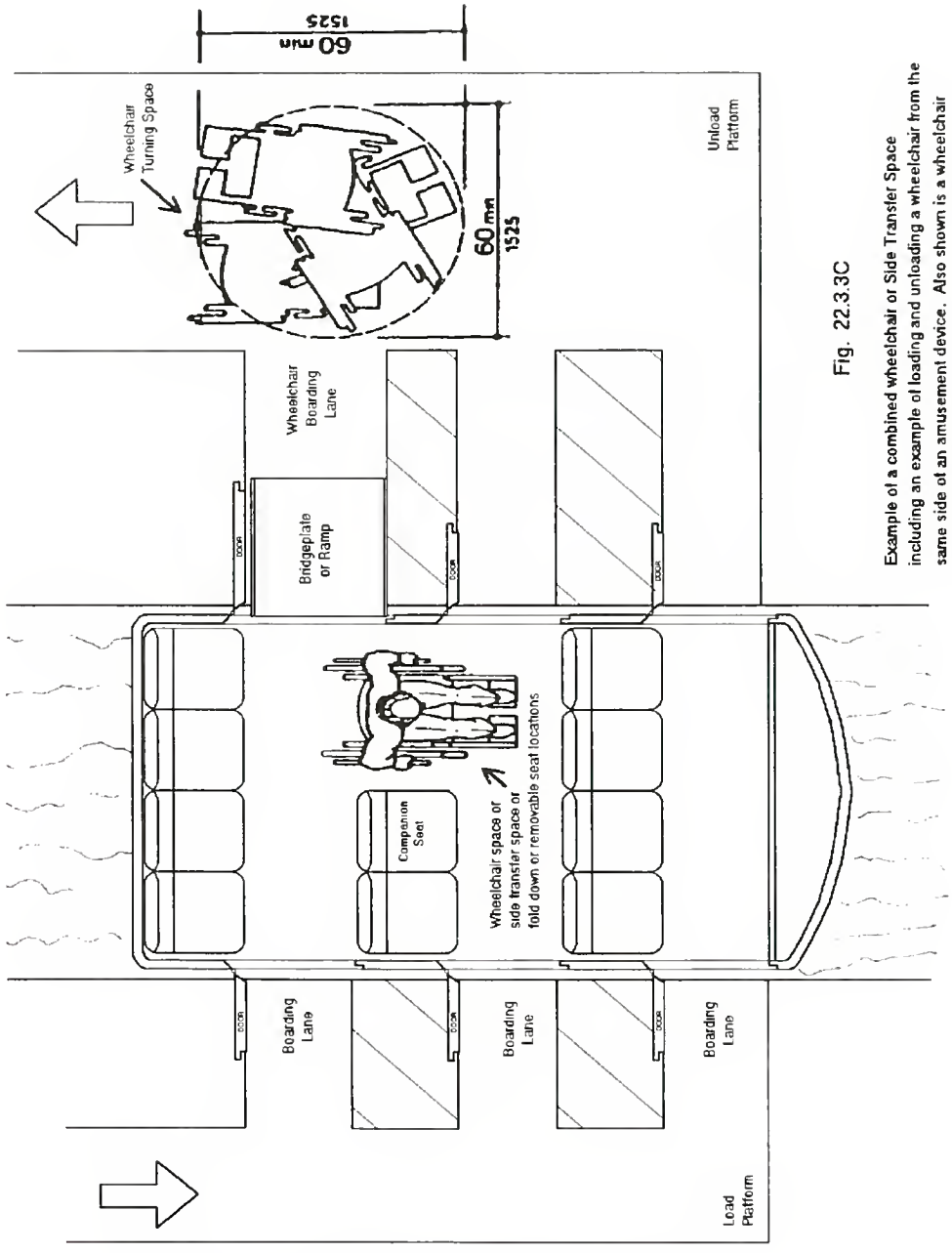

Fig. 22.3.3C

Example of a combined wheelchair or Side Transfer Space including an example of loading and unloading a wheelchair from the same side of an amusement device. Also shown is a wheelchair turning space that is not adjacent to the amusement device.

Figure 22.3.3C

22.3.4 Bridging or Ramping Horizontal Gaps or Changes in Level.

22.3.4.1 Intentionally Omitted

22.3.4.2 Horizontal Gaps Between the Amusement Device and the Load or Unload Area. Where a wheelchair enters or exits an amusement device and a horizontal gap or space between the amusement device and the load or unload area exceeds either 1 1/2" for unassisted wheelchair load or unloading; or 3" for operator assisted wheelchair loading or unloading, a bridge plate or ramp shall be provided.

Rationale: Due to normal and expected wear of amusement device elements, parking tolerances may result in varying gaps. It may not be feasible to provide a ramp or bridgeplate to bridge a gap for amusement ride systems where parking positions are not repeatable.

On many amusement devices, gaps are necessary to protect the guests from the potential for pinching between the amusement device and the load platform.

The 1 1/2" horizontal gap has been selected to be consistent with current ASME Elevator Codes. ASME Safety Code for Elevators and Escalators - 17.1, section 108.1d, states "The maximum clearance shall not be more than 1 1/2 inches (38 mm)." A 3" horizontal gap is permitted for light rail vehicles pursuant to section 1192.73 (d) (2) of the Transportation Guidelines.

22.3.4.3 Changes in Level. Where there is a change in level of more than 5/8" between the ground and the load/unload area or the amusement device and the load/unload area, a bridge plate, ramp or platform lift shall be provided.

Rationale: 5/8" is consistent with the specification in the Transportation Guidelines as a maximum allowable height differential. See section 1192.73(d)(1), of the Transportation Guidelines.

22.3.4.4 Widths of Bridge Plates, Ramps and Lifts. If a bridge plate, ramp or lift is used for loading or unloading of wheelchairs onto amusement devices, the clear width shall be no less than 30" for unassisted wheelchair loading or unloading and no less than 28 1/2" for operator assisted wheelchair loading or unloading.

Rationale: This is consistent with the 28 1/2" requirement found in the Transportation Guidelines, section 1192.83(b)(6).

Thirty inches is consistent with ramp requirements governed by National Fire Protection Association, Life Safety Code, 5-2.5.2.

22.3.4.5 Amusement Device Lifts. Lifts which provide access between the load/unload area and an amusement device are part of the amusement ride system and shall comply with applicable requirements of section 22 instead of ADAAG 4.11.

Rationale: Lifts other than those specified in ADAAG 4.11 may be utilized for provision of access to amusement ride systems. Allowing forms of lifts other than facility platform lifts would increase the potential for creative options in providing accessibility to amusement ride systems.
Lifts that provide access to an amusement device are integral to an amusement ride system and must comply with applicable amusement device codes and specifications. ADAAG 4.11 requires that lifts comply with ASME A17.1, Safety Code for Elevators and Escalators, section XX, 1990. That code specifically exempts amusement devices from its application.

22.3.4.6 Slope Ratios for Bridge Plates and Ramps. The slope ratio of a bridge plate or ramp shall comply with Table 22.3.4.6.1.

22.3.4.6.1 Table of Slope Ratios for Ramps and Bridge Plates.

Height of Amusement Device from Load or Unload Area*	Maximum Slope for Unassisted Wheelchair Access on Ramps*	Maximum Slope for Operator Assisted Wheelchair Access on Ramps*
5/8" to 3"	1:4	1:4
greater than 3" to 6"	1:6	1:4
greater than 6" to 9"	1:8	1:4
greater than 9" to 15"	1:12	1:4
greater than 15:	1:12	1:8

*Measured with amusement device at 50% passenger load.

Rationale: Access to a greater number of amusement devices is achievable by allowing for steeper slopes and by permitting the operator to assist in maneuvering the wheelchair on the ramp and onto the amusement device. See section 22.3.7.

It is recognized that slope ratios may vary during passenger loading due to amusement devices that are floating, such as boats, or that have suspension systems. The slope ratios listed for unassisted access are derived from the Transportation Guidelines, light rail, section 1192.83(c)(5).

22.3.4.7 Bridge Plate, Ramp, and Lift Barriers. Ramps or bridge plates which exceed 3 inches in length or which are less than 36" in width shall have barriers at least 2" high on each side or shall have other means to prevent wheels from slipping off of the side of the ramp or bridge plate. A moveable barrier at least 2" high or other means shall prevent wheels from rolling off of a lift.

Rationale: Examples of other means to prevent wheels from slipping include, but are not limited to, providing operator assistance or other forms of barriers such as an amusement device door.

22.3.4.8 Surfaces of Bridge Plates, Ramps and Lifts. The bridge plate, ramp or lift surface shall be slip resistant and shall not have protrusions from the surface greater than 1/4" high. The surface shall permit drainage where necessary. When grating is utilized it shall comply with section 20.2.3.

Rationale: Derived from Transportation Guidelines, section 1192.83(c)(2).

22.3.5 Handrails for Bridge Plates, Ramps and Lifts. When bridge plates or ramps are used between the load or unload area and the amusement device, handrails are not required. When lifts are used with mobility aids other than wheelchairs, handrails shall be provided.

Rationale: In comments to the Transportation Guidelines, sections 1192.83 and 1192.125, the Access Board concluded that handrails are not required on ramps or bridge plates.

Providing handrails next to amusement devices may also present safety hazards such as limbs of passengers on board the amusement device striking stationary handrails in the load or unload area. In addition, the handrails in the load or unload area may interfere with the operation of the doors on the amusement device.

22.3.5.1 Handrails for Bridge Plates, Ramps, and Lifts. The handrail provisions of ADAAG sections 4.8.5 and 4.26 do not apply. When provided, handrails shall comply with the following and section 22.3.5.2 through 22.3.5.5:

Handrails need not be continuous but shall allow persons with disabilities to grasp them before boarding the ramp and to continue to use them throughout loading and unloading.

22.3.5.2 Handrail Interference. Handrails, where provided, shall not interfere with the bridge plate, ramp or lift operation or maneuverability of wheelchairs or mobility aids while entering or leaving the amusement device.

Rationale: The language was derived from Transportation Guidelines, section 1192.83(c)(8).

22.3.5.3 Moving Handrails. When bridge plates, ramps or lifts move while occupied and have handrails, the handrails shall move in unison with the bridge plate, ramp, or lift.
Rationale: It is recognized that bridgeplates, ramps or lifts may move during passenger loading onto amusement devices that are floating or have suspension systems. In these cases, the handrails need to move with the bridgeplates, ramps or lifts rather than the handrails being fixed and the ramp moving.

22.3.5.4 Height of Handrails. The top of the handrail shall be between 30 and 38 inches above the bridge plate, ramp or lift surface.

Rationale: This is consistent with the height rules listed in Transportation Guidelines, section 1192.83(c)(8).

Uniform Building codes require 32-34".

22.3.5.5 Size Requirements For Handrail. The handrail shall have an outside diameter between 1 1/4" and 2" or shall provide an equivalent grasping surface; shall have eased or rounded edges with corner radii of not less than 1/8"; and shall provide a minimum 1 1/2" knuckle clearance from the nearest adjacent surface. See Figure 22.3.5.5A.

Rationale: Handrail diameters can exceed the 1 1/2" ADAAG 4.26.2 dimension referenced in ADAAG up to a diameter of 2" due to the extensive and common use of pipe as handrail material. Refer to conclusions listed in the AGT Technical Assistance Manual, October 1992, section 1192.57, paragraph C.

Examples of equivalent grasping surfaces can be found in section 22.4.2.5.

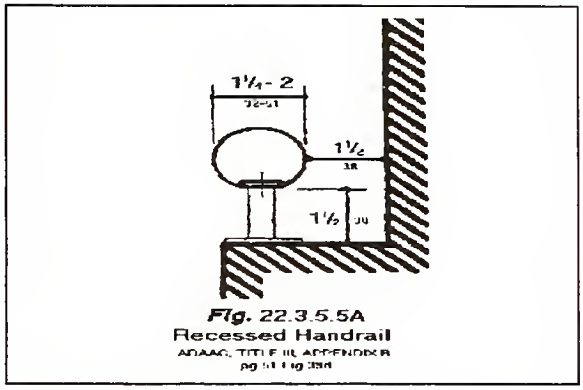

Fig. 22.3.5.5A
Recessed Handrail
ADAAG, TITLE III, APPENDIX B

Figure 22.3.5.5A

22.3.6 Wheelchair Spaces on Amusement Devices.

22.3.6.1 Wheelchair Floor Space Overlapping Access Aisle. The wheelchair location may adjoin or overlap the access aisle for other seating within the amusement device.

22.3.6.2 Fold Down Seats In Wheelchair Spaces. Wheelchair seating locations may have fold down or removable seats to accommodate other passengers when a wheelchair is not occupying the area, provided the seats, when folded up, do not obstruct the minimum clear space required. See Figure 22.3.3C above.

22.3.6.3 Sight Lines. To the maximum extent feasible, wheelchair spaces should be so arranged to provide comparable sight lines to other seated passengers on the amusement device.

22.3.6.4 Companion Seating. To the maximum extent feasible, companion seating that is side by side and in shoulder alignment with the wheelchair space should be provided. See Figure 22.3.3C.

22.3.6.5.1 Wheelchair Space Envelope Onboard the Amusement Device. When wheelchair spaces are provided, to the maximum extent feasible, a minimum clear floor space of 48" by 30" should be provided except that the overlap spaces described in sections 22.3.6.5.2 and 22.3.6.5.3 are permitted.

Rationale: Refer to Transportation Guidelines, section 1192.95(d) Mobility Aid Seating Location.

22.3.6.5.2 Wheelchair Space Envelope Foot Clearance. An overlap space of not more than 6 inches of required floor space is permitted for a wheelchair foot rest under another seat or element within the amusement device, provided there is a minimum of 9 inches from the floor to the lowest part of the overhanging seat or element.

Rationale: Refer to Transportation Guidelines, section 1192.95(d) Mobility Aid Seating Location.

22.3.6.5.3 Wheelchair Space Envelope Knee Clearance. An overlap space of not more than 19 inches of required floor space is permitted for the wheelchair users' knee space and foot rests under a portion of the amusement device, provided there is a minimum height of 27 inches high and a minimum width of 30 inches.

Rationale: Refer to ADAAG 4.32.3 Fixed or Built In Seating at Tables.

22.3.7 Operator Assisted Wheelchair Access. Operator assisted access to the wheelchair space may be provided. Nothing in this section shall be interpreted to require an operator to provide personal assistance.

Rationale: The operator is responsible for the proper loading and unloading of all persons on amusement devices. The operator may provide assistance in maneuvering, guiding, placing and securing a wheelchair on an amusement device in order to provide for safe boarding. An operator is not required to lift a person or provide other personal assistance.

22.3.8 Operation of Securement and Other Devices. When bridge plates, ramps, lifts, or wheelchair securement systems or devices are provided, the securement system or device may be designed to allow the amusement device operator, and not the wheelchair user, to operate the securement system or device.

Rationale: The operator is responsible for the proper operation of all securement devices and restraint systems. Typically the operator does not permit the rider to operate the securement devices or restraint systems.

22.3.9 Mobility Aid Devices Other Than Wheelchairs. Mobility aids which can be properly contained and restrained within an amusement device without creating a safety hazard shall be permitted. Where not feasible or a safety hazard, alternative storage shall be provided.

Rationale: Providing storage on the load or unload platform is a common practice for amusement device operations. Mobility aid devices are commonly returned to the patron by the operator, after being temporarily stored in an area which is not an area commonly used by other guests.

22.4 TRANSFER ACCESS TO AMUSEMENT DEVICES

22.4.1 Scoping Requirements for Transfer Access Onto Amusement Devices. To the maximum extent feasible, without fundamentally altering the nature of the amusement ride system or experience, a means of transfer onto an amusement device shall be provided in accordance with section 22.4.

Rationale: See rationale for section 22.3.1

Examples of a means of transfer, include but are not limited to, diagonal and side transfer. Other types of transfers are permitted where required by the amusement device configuration.

Rationale: The size and shape of amusement devices may vary significantly. It is impossible to anticipate the various combinations of shapes and other factors which may require unique methods of transfer.

22.4.2 Transfer Seat. At least one transfer seat on one amusement device within the amusement ride system shall be available. A transfer seat may be a special seat, standard amusement device seat or fold down seat.

Rationale: Amusement device cycles typically range from 90 seconds to 15 minutes. Due to the frequency of ride cycle, a high volume of people who transfer can be accommodated each hour as compared to a

conventional motion picture theater, with a cycle time of 90 minutes.

22.4.2.1 Horizontal Gaps, Changes in Level, Bridge Plates, Ramps and Lifts. Where persons using wheelchairs board a ride device to accommodate a transfer, the provisions regarding gaps, changes in level, bridgeplates, ramps, and lifts specified in sections 22.3.4 through 22.3.5 shall apply.

22.4.2.2 Transfer Floor Space Required For Diagonal Approach Transfer. The clear transfer floor space required for a diagonal approach will be no less than 36" wide and the length, including the seat, will be no less than 50" long. The minimum floor space for wheelchairs may be positioned to best facilitate the transfer. The transfer floor space is not required to be shaped as a true rectangle but the end of the transfer floor space that includes the seat will be centered with respect to the center of the seat's bottom. See Figure 22.4C. To allow for theming and special vehicle configurations, the transfer floor space can be angled or curved as shown in Figure 22.4C. (Note: Figures 22.4A and 22.4B have been intentionally omitted.)

Rationale: The space dimensions on or adjacent to an amusement device used for the transfer will be dependent on the unique design and configuration of the amusement ride system, and the nature of the ride experience. For this reason it is expected that the transfer space used will be unique for each different amusement device. Additionally, the transfer space is dependent on the type of transfer to be executed. This draft considers a diagonal approach (reference Figure 22.4C) and a side approach (reference Figure 22.4D). Different space requirements may be appropriate for other types of transfers.

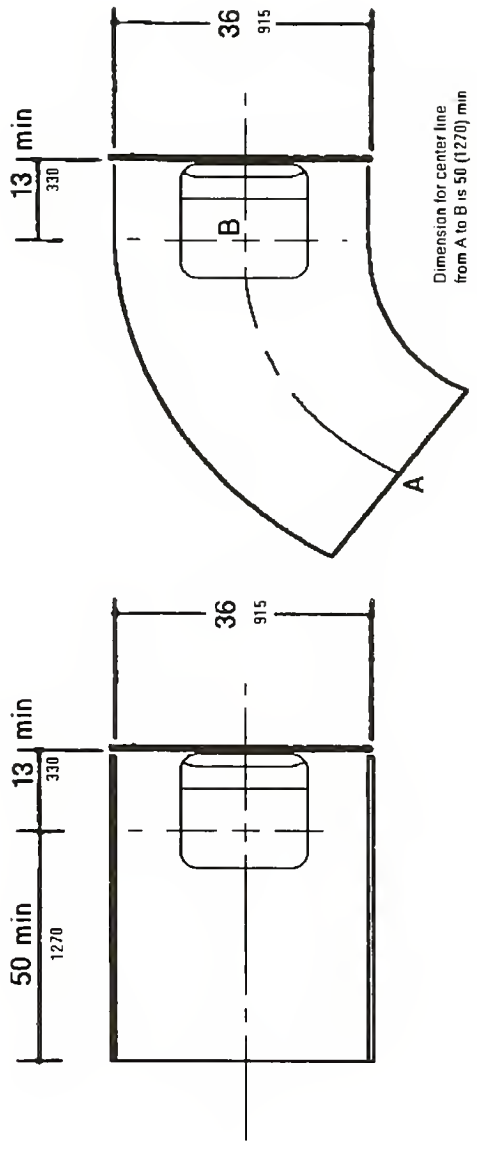

Fig. 22.4C
Diagonal Approach Transfer Space

Derived from ADAAG, TITLE III, APPENDIX B pg. 43 Fig 30b

Figure 22.4C

22.4.2.3 Transfer Floor Space Required for Side Approach Transfer. The transfer floor space required for a side transfer will be no less than a 32" by 42" clear space directly adjacent to the seat's edge. The minimum floor space for wheelchairs may be positioned to best facilitate the transfer. The floor space required for transfer can adjoin or overlap the access aisle or boarding lane. See Figure 22.4D.

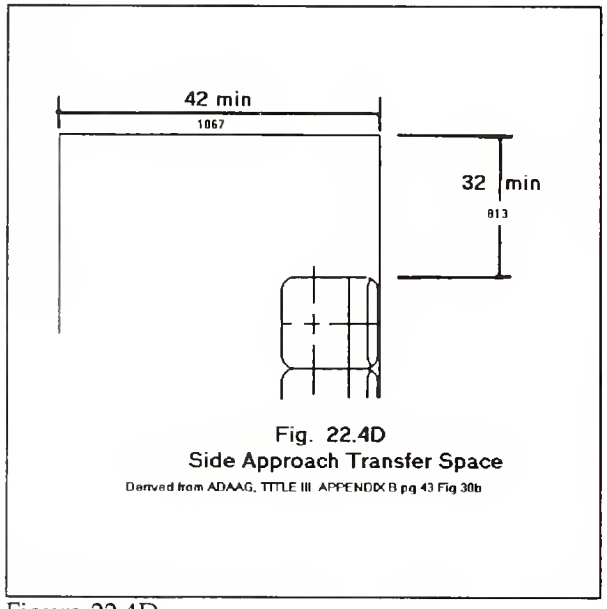

Fig. 22.4D
Side Approach Transfer Space
Derived from ADAAG, TITLE III APPENDIX B pg 43 Fig 30b

Figure 22.4D

22.4.2.4 Special Transfer Provisions. Where it is not feasible to accommodate a transfer immediately adjacent to the transfer seat, then the transfer floor space shall be directly adjacent to the amusement device, or if the amusement device is contained within a flume, pool, track or similar structure, the transfer space shall be adjacent to such structure and shall comply with section 22.4.2.2 or 22.4.2.3.

Rationale: There are certain amusement devices and amusement ride systems which have features which are integral to the amusement device or amusement ride system and which are in between the amusement device and the person using a wheelchair. For example, flumes and pools which contain ride devices require sides which must be higher than the sides of the floating amusement device, or water levels which must be lower than the loading area, in order to keep or contain the floating amusement devices in the pool or flume. This usually means that (i) the closest a floating amusement device can get to the loading/unloading area is the cumulative thicknesses of the flume or pool wall and the side of the floating amusement device; and (ii) the person in a wheelchair will not be level with the height of the transfer seat.

22.4.2.5 Transfer Grips. If appropriate, temporary or permanent transfer grips shall be provided to accommodate a means of transfer and shall comply with the following guidelines. Examples of transfer grips include, but are not limited to, the following:

1. Adjacent structure not attached to amusement device.
2. Sides of the amusement device.
3. Lap bars locked in the up position.
4. Seat backs.
5. Arm rests.
6. Handrails.
7. Grab bars.

Rationale: There may be some ride systems where transfer grips may protrude or interfere with the operation of the ride system or present a hazard. For example, a transfer grip on a lazy river tube ride may interfere with the tube operation if placed on the tube and may create a safety hazard if placed outside of the tube.

22.4.2.5.1 Placement and Location of Transfer Grip, On or Adjacent To The Amusement Device. The transfer grip shall be mounted as appropriate to allow the person transferring to reach, grasp, hold, and support during the transfer.

Rationale: It is very difficult to standardize the location and design of the transfer grip because of the many variables associated with the unique design of each amusement device, the unique nature of each ride experience, and the type of transfer being performed.

22.4.2.5.2 Clearance Requirements for Transfer Grips. The transfer grip shall be mounted adjacent to a vertical surface. The space between the vertical surface and the transfer grip shall be a minimum of 1-1/2 in. The transfer grip may be located in a recess if the recess is a maximum of 3 in. (75mm) deep and

extends at least 18 in. (455mm) above the top surface of the transfer grip.

Rationale: This language was derived from ADAAG 4.26.2.

22.4.2.5.3 Surface Requirements of Transfer Grips. Any transfer grip and surface adjacent to it shall be free of sharp or abrasive elements. Edges shall have a minimum radius of 1/8 in. (3.2 mm).

Rationale: This language was derived from ADAAG 4.26.4.

22.4.2.5.4 Rotation of Transfer Grips. Transfer grips shall not rotate within their fittings.

Rationale: This language was derived from ADAAG 4.26.3(5).

22.4.2.6 Provisions for Assistive Transfer Devices. Where assistive transfer devices are used, deviation from these guidelines is permitted to accommodate the assistive transfer device. Examples of assistive transfer devices include, but are not limited to: transfer boards, transfer steps, transfer chairs, or other similar devices.

Rationale: ADAAG 2.2 provides for deviation from particular technical requirements by use of other designs and technologies where alternative designs and technologies will provide substantially equivalent or greater access.

22.4.2.7 Transfer Seats on the Amusement Device. Where diagonal or side approaches are provided, to the maximum extent feasible, the transfer seat's bottom shall be located at a height of no less than 15 inches and no more than 19 inches above the surface of the floor from which the person is transferring.

Rationale: Some amusement devices do not have floors. As a result, it is necessary to reference the point for seat height with respect to the initial point of transfer, (i.e., the loading/unloading platform area) rather than the amusement device floor.

The height of the seat will dramatically affect the point of the center of gravity and, as a result, the impact of ride dynamics and resultant forces on the person occupying the seat. Amusement devices vary from ride system to ride system due to ride characteristics such as ride dynamics.

SECTION 23 - WATER PARKS AND AQUATIC ATTRACTIONS

23.0 WATER PARKS AND AQUATIC AMUSEMENT DEVICES AND ATTRACTIONS

23.1 PURPOSE

This section sets forth guidelines for accessibility to water parks and aquatic places of amusements for individuals with disabilities. All new construction of water parks and aquatic attractions are required to be accessible in accordance with these guidelines to the maximum extent feasible unless complying with these guidelines would fundamentally alter the nature of the amusement experience.

Rationale: ADAAG and section 20 - Facilities For Places of Amusement address the permanent and temporary buildings and facilities in places of amusement that may contain aquatic attractions. They do not adequately address the aquatic amusement devices and attractions themselves, which have unique design conditions.

23.2 GENERAL REQUIREMENTS

Facilities at water parks shall comply with the requirements of section 20.0.

Rationale: Aquatic amusement devices and attractions have similar construction, mechanics, operation and safety parameters as other amusement devices and attractions. The difference between amusement devices and the aquatic amusement devices described in this section is that water is used to speed or slow down the rider in the device, or provide other interactive aquatic recreation, unlike a conventional swimming pool or spa.

Aquatic amusement devices and attractions can generally be placed in four categories.

1. Kiddy water play attractions, such as slides, ponds, crawling structures, sand bars and water squirts.

2. Passive water attractions, such as family pools with current, splash, bubble and spray features, lazy rivers or family raft slides.

3. Interactive and challenging water attractions such as wave pools, surfing devices, swimming, diving and swinging devices.

4. Water slide thrill devices such as speed slides, drop slides, moguls, mat, tube and tub slides, and propelled, tube tunnels.

These amusement devices and attractions offer the user activities with various degrees of challenge, thrill, risk and relaxation.

23.3 ACCESSIBLE ROUTE

All accessible elements of aquatic amusement devices and attractions shall be connected by at least one accessible route.

23.4 ACCESS INTO SWIMMING POOLS, LAZY RIVERS AND WADING POOLS

In addition to the pool edge, at least one other method of entry into the pool shall be provided.

a. Examples of alternate methods of entry include, but shall not be limited to, transfer steps, transfer levels, ramps, lifts, and zero depth entry.

b. Surfaces of aquatic ramps or landings planned for wheelchair use must be slip resistant. Surfaces for other methods of entry, involving transfer, shall not be abrasive.

Rationale: The subcommittee does not have a definitive recommendation on which type of alternate method of entry into a pool is most appropriate.

Ramps may be an effective method for some people with certain mobility impairments to gain access into a pool. Ramps may be a difficult means of access for people who use wheelchairs. Wheelchairs left in swimming areas or in water having currents may also cause a safety hazard.

23.4.1 Stairs. Stairs shall be designed in accordance with applicable local swimming pool design codes. A handrail is required on one side only, or in the center of stairs greater than 60 inches wide.

23.4.2 Aquatic Ramps. Aquatic ramps may have a maximum of 1:12 slope leading into the water, and shall be at least 36 inches wide.

Rationale: Ramps parallel to the run of the pool are the least desirable configurations for safety. Ramps perpendicular to the run of the pool enlarge the building envelope, and require attention to circulation patterns around the pool.

Ramps into pools may present a hazard for bathers. Due to light refraction through the water, a person, especially a child, preparing to jump or dive into the water may have a false sense of the water depth and the location of the edge of the ramp.

a. A level landing shall be provided at 24 to 30 inches below the stationary water level. Level water landings and ramp landings shall be a minimum of 60 inches by 60 inches in size.

Rationale: Landings should be located so they do not cause the person to become buoyant before reaching a level platform in a water depth that is manageable for their capabilities to exit and re-enter the wheelchair. These landings may become recreational areas for people who just want to wade into the water.

b. An aquatic ramp's landing shall not be in the path of swimming lanes or water currents.

c. Where a ramp is provided any edge not attached to a wall shall have a rounded curb 1 1/2 inches high, or other method of edge protection.

d. A ramp landing shall be edged with a rounded or domed curb 1 1/2 inches high, or other means, to prevent the wheelchair from continuing into deeper water level. The rounded or domed curb should be so designed that it does not become a tripping hazard.

e. ADAAG 4.8.5 applies to handrails on aquatic ramps, except that a handrail shall be provided only on one side of the ramp, away from the body of

water in the pool and shall not extend beyond the end of the landing.

Rationale: Handrails that are partially submerged in the water or adjacent to swimming lanes are a protrusion hazard for swimmers. These underwater handrails or guard rails are typically banned in swimming pool design codes.

f. Handrails on aquatic ramps shall not intersect swimming lanes.

23.4.3 Zero Depth Entry. Zero depth entry may have a slope up to 1:16 ratio, and lead to a level landing, as provided by 23.4.2(a).

Handrails are not required at sides of zero depth grade entry paths where the ramping begins within 60 inches of the water's stationary edge.

Rationale: This is the most popular method of entry into wave pools, and other similar pools. This is a reproduction of a soft grade beach, but with paving and sand. Floating buoys or pool surface markings are recommended to define the extent of the 30" water depth in a section of the pool.

23.4.4 Transfer Steps Entry. Transfer steps entry shall have the highest transfer level set at 17 to 19 inches above landing elevations. Their surfaces may be firm or resilient, and should not be abrasive in texture.

Rationale: More research is needed to determine the safety of abrasive and firm (hard) surfaces for transfer steps for the user, and for those persons who may use them as conventional stairs.

a. A level wheelchair landing 60 inches by 60 inches shall be located adjacent to the pool edge and the transfer steps.

b. Risers of transfer steps shall be 5 to 7 inches in height. Transfer steps shall tier down to a grade level between 12 to 24 inches below stationary water level.

c. Transfer steps shall have a minimum of 14 inches of tread depth and a minimum of 14 inches tread width.

Rationale: Some research is needed to determine the appropriate depth that a person needs to achieve in order to become buoyant, or to exit the water.

More research is needed to appropriately set dimensional standards for transfer steps. The reach ranges of ADAAG 4.2 should be considered in the design and configuration of transfer steps and handrails.

d. One handrail shall be provided at the side of the transfer step opposite the wheelchair landing. It shall be located within the reach ranges of ADAAG 4.3 Figure 6.

e. Transfer steps and their handrails shall not intersect swimming lanes.

23.4.6 Ladders. Ladders may be provided in accordance with applicable local swimming pool design codes. Their handrails shall not intersect with the stationary water level.

23.4.7 Lifts. Manual or mechanical lifts may be used for access.

Rationale: When lifts are used there should be continuous attendant observation of use and equipment availability.

23.5 Pool and Spa Side Walls

Swimming pool and spa side wall heights shall not extend more than 19 inches above the deck, and shall be at least 60 inches in length.

Rationale: This would allow for ease of access for those with mobility difficulties as well as those requiring wheelchair access. At issue is the height to step over the pool or spa edge, and then down into the water, and then to be able to exit the pool or spa again.

23.6 AQUATIC AMUSEMENT DEVICES AND ATTRACTIONS

Aquatic amusement devices and attractions may be designed to include climbing ropes, ladders, stairs or other objects; sliding from elevated areas into a plunge or skid pool; dropping into the water;

jumping; swinging; floating; swimming or diving, and shall not be included in the accessible route criteria of section 20 herein.

Rationale: These activities are fundamental to the nature of aquatic amusement devices and attractions such as the dramatic sloped slides, water pipes, flumes and moguls (water bumpy slides). These are the water attraction equivalent of thrill rides.

The use of ramping is not feasible or practical because some of these slides are 40 to 140 feet in elevation, thus requiring a minimum of 560 to 1960 feet of ramping at a gradient of 1:12.

23.6.1 Aquatic amusement devices and attractions are not required to have elevators per ADAAG 4.1.3(5) EXCEPTION 1.

Rationale: Aquatic amusement devices and attractions do not have stories such as are found in buildings. Instead they have platform levels each of which is typically less than 3000 square feet. The platform levels of water slides and attractions are not stories or occupiable space per ADAAG definitions. Therefore, the ADAAG elevator exemptions for buildings and facilities having less than 3 stories or less than 3000 square feet per story would apply.

Lifts are not a viable option for a water slide because ADAAG 4.11 requires compliance to ASME A17.1, Safety Code for Elevators and Escalators, Section XX, 1990, which limits the platform travel to 12 feet in elevation.

PLAY SETTINGS SUBCOMMITTEE

PLAY SETTING
OUTREACH
POLICY ON PLAY AREA ACCESS
ADAAG AND ELEMENTS WITHIN PLAY SETTINGS
DEFINITIONS
PLAY SETTING RECOMMENDATIONS FOR NEW CONSTRUCTION

☛ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

PLAY SETTING

A play area is a designated play and learning environment with a range of settings carefully layered on the site. A play area may be inside or outside and contains one or more of the following elements: entrances, pathways, fences and enclosures, signage, play equipment, game areas, landforms and topography, trees and vegetation, gardens, animal habitats, water play, sand play, loose parts, gathering places, stage areas, storage, and ground covering and surfacing.

OUTREACH

The concepts in this document were developed, reviewed, or made available to the following organizations: ASTM F15.29 Public Playground Safety Subcommittee, TASH, National Council on Independent Living, California Parks and Recreation Association, California Department of Rehabilitation, California Council of the Blind, the playground industry, NRPA and all state chapters of the California Independent Living Center Association.

POLICY ON PLAY AREA ACCESS

An accessible play experience provides diversity in both the physical and social environment and enhances the potential for the child to make choices, take on challenges, learn, and have fun while conforming to existing safety standards. A play setting supports human development since play is a primary means for a child to learn and develop. It is an intricate, intimate process which helps children develop and become socialized. All children have a right to play, and diversity of play opportunity is the key to both a quality play experience and the integration of all children.

Play is a social experience as well as a cognitive and physical experience. Since the play area must present a challenge as part of its value, every part of the play area may not be accessible to all of its users but the social experience must be accessible to everyone. The physical challenge is developmental in nature and must be "earned" through an individual's efforts, while the opportunity for a social interaction is a right. Physical challenge within the play area must be part of a progression of challenges which promote an individual's skill.

ADAAG AND ELEMENTS WITHIN PLAY SETTINGS

Currently ADAAG does not adequately address children's needs anthropometrically or socially in the environments they use. Some elements within a play setting, such as pathways, may be addressed currently by ADAAG, but will need to be modified when used in a play setting because of safety considerations related to play behavior. Play area guidelines which are not addressed in ADAAG will be presented element by element in this document. There is no attempt at this time to correlate them to the numbering system in ADAAG.

5. DEFINITIONS

5.1 ***accessible,*** adj, see ADAAG 3.5

5.2 ***accessible playground,*** n, play area setting which, when viewed in its entirety, may be approached, entered, and used by adults and children with disabilities.

Rationale: The use of the phrase "when viewed in its entirety" conveys the message that not necessarily every feature of the play area, or every piece of equipment, shall be accessible, and that in determining whether a play area is accessible, the examiner must view equipment, play opportunities, surfacing, and other features, together. This phrase is used in the title II DOJ ADA rule, in relation to making programs, services, and activities in existing facilities accessible.

5.3 *accessible route to activities,* n, a path in the play area which connects the accessible activities within the play setting and promotes social interaction.

Note: This definition differs somewhat from the ADAAG accessible route definition, which is "a continuous unobstructed path connecting all accessible elements . . . ." ADAAG goes on to define interior and exterior accessible route elements.

5.4 *accessible surface,* adj, surface in a play area which is firm, stable, and slip resistant, and where within the use zone of equipment, is resilient as described by the ASTM F1292 performance standard.

5.5 *activity,* n, a play and or recreational/learning experience designed into the play equipment or area and supported by the fixed elements which can consist of play equipment, developed areas, natural areas, etc.

Note: This definition was originally drafted with the phrase "intended play value." That phrase was removed after comment that some associate play value with play experience, which stimulate one or more of the five senses.

5.6 *auxiliary pathway,* n, a secondary route of travel adjacent to an accessible route to activities, which is not necessarily accessible.

5.7 *close proximity,* adj, the spatial placement in a playground between play opportunities or play events which enables social interaction among children.

5.8 *deck,* n, a platform which the user can stand upon, wheel onto, or transfer onto, for the purpose of interacting with others or using a designated play event or activity.

Rationale: This definition is different than ASTM, to acknowledge that a deck can be accessed and rolled on, or transferred on, by a user with a disability.

5.9 *edge treatment,* n, shape, form, or texture which defines the edge of a walk, path, ramp, or curb as different from the rest of the surface material.

5.10 *game table,* n, an elevated platform or surface in a play area, intended for the playing of board games.

5.11 *garden,* n, an area for the growing of plants and flowers which permits digging and planting, or displays plants and flowers for visual, tactile, or olfactory stimulation.

Rationale: This definition addresses both working gardens and ornamental gardens.

5.12 *gathering place,* n, an area designated for congregating.

5.13 *like or similar play activities,* adj, intended play/learning opportunities or sensations which afford similar experiences, such as swinging, sliding, falling, rocking, climbing, and other sensations.

5.14 *loose fill surfacing material,* n, playground surfacing such as sand, gravel or wood chip, which require a barrier to contain them in order to stay in place.

5.15 *play area,* n, a designated area intended for children's play.

5.16 *play area entrance,* n, a designated point of ingress to the play area, intended to orient and inform users about the play area, and to display information about the play area.

5.17 *play component,* n, an item which provides opportunity for play; a piece of equipment or a part of a piece of equipment which provides intended play and learning value. Examples of play components are interactive panels, slides, fire poles, climbers and spring riders.

5.18 *play equipment,* n, a structure with at least one designated play surface, anchored to the ground or not intended to be moved, for use in play areas of parks, schools, child-care facilities, amusement parks, institutions, multiple family dwellings, resorts, recreation developments, restaurants, and other areas of public use, including places of public accommodation operated by public or private entities.

5.19 *sand play area,* n, a defined area in a play area which allows a child to manipulate sand by itself or in combination with other materials.

5.20 *soft contained play system,* n, a play structure comprised of fully enclosed, resilient play components that limits or controls ingress and egress.

5.21 *transfer platform,* n, the first point at which a person who uses a wheelchair can leave the wheelchair and access play elements or play equipment.

5.22 *transfer step,* n, a series of adjacent decks or elevated surfaces, provided to allow a child who has transferred from a wheelchair to ascend or descend play equipment, structures, or developed areas.

5.23 *transfer system,* n, the entire set of components on the play equipment which provides the hardware that assists the child in leaving the wheelchair and allows the child to move through the structure such as transfer platforms and transfer steps.

5.24 *use zone,* n, the ground level area beneath and immediately adjacent to a play structure or equipment that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment.

5.25 *waterplay area,* n, a defined area in a playground which allows a child to manipulate water by itself or in combination with other materials.

6. PLAY SETTING RECOMMENDATIONS FOR NEW CONSTRUCTION

6.1 MOST INTEGRATED SETTING

6.1.1 Scoping. Accessible play components of play equipment and accessible play areas shall be mixed within other play areas to promote interaction between users with and without disabilities.

6.1.2 Technical Requirement. Areas in the play setting which provide activities or equipment requiring the most challenging physical ability will also provide in the same vicinity less challenging activities or equipment to allow the possibility of interaction to occur among levels of challenge.

6.1.3 Rationale. Every activity area in the play setting must provide access and hopefully integration for a child. Sometimes access and integration may mean just being part of the action so communication can occur. A designer must be required to consider as completely as possible all the ways interaction can occur across ability levels.

6.2 ACCESSIBLE ROUTE OF TRAVEL WITHIN A PLAY SETTING

6.2.1 Scoping. An accessible route to activities which connects the accessible activities within the play setting will be part of every play area in order to promote social interaction and use of the play components.

6.2.2 Technical Requirements

1. The surface of the accessible route shall be firm, stable, slip resistant, safe to crawl on, and where within the use zone of equipment, resilient as described by the ASTM F1292 performance standard.

2. Where items of equipment are used to provide more than one like or similar play component and they are in close proximity, a minimum of one piece of the play equipment is required to be accessible for the primary intended use of the activity. Where there are more than one of the same piece of play equipment that provides the same activity not in close proximity, each must be accessible.

3. If a firm, stable, slip-resistant surface is not provided over the entire surface of the play setting, then the following criteria for path design apply:

a. An accessible route to and for the intended use of the different activities within the play area setting must be provided.

b. The accessible route must be a minimum of 60" wide.

c. The cross slope of the accessible route of travel shall not exceed 1:50.

d. The slope of the accessible route of travel shall not exceed 1:20.

e. If the slope exceeds 1:20 it is a ramp. A ramp on the accessible route of travel on the ground plane shall not exceed a slope of 1:16. All other ramp conditions found in ADAAG apply except for the handrail requirements. Ramps onto play equipment are exempt (see section 6.2.1).

f. If the accessible route of travel is adjacent to loose fill material or there is a drop off, then the edge of the pathway shall be treated to protect a wheelchair from traveling off the route and into the loose fill material. If this route is within the use zone of the play equipment, the path and the edge treatment shall meet ASTM F1292.

g. Changes in level shall be consistent with ADAAG requirements.

h. Where egress from an accessible play activity occurs in loose fill surface which is not firm, stable, and slip-resistant, a means of returning to the point of access for that play activity shall be provided, and the surfacing material shall not splinter, scrape, puncture or abrade the skin when being crawled upon.

i. In order to prevent obstructing a path where there is a seating or an activity area, there must be a minimum clear width of 36" for passing.

j. Auxiliary pathways are permitted with a minimum width of 36". If this 36" wide route is longer than 20′, there must be a turnaround area every 20′. For play purposes, an auxiliary path may be textured or bumpy for a maximum length of 5′. Any texture may be used. Grades can be extreme and bumps will be determined by safety, not accessibility.

6.2.3 Rationale

Accessible Route of Travel Within a Play Setting. A path which connects the accessible play elements within a play area setting is essential. Without this connection, children with disabilities can too easily find themselves isolated from their friends without disabilities. The accessible route within a play setting avoids problems caused by intentional and unintentional design flaws and satisfactorily promotes social interaction.

Because play is a primarily social experience, accessible routes through a play setting must connect all types of activities.

Example 1: If an activity is defined as a spring loaded rocking rider and five of these are located in the same area, then one of these items will have an accessible route of travel up to and around it. If there are three distinct groupings of these spring loaded rocking riders located around the play area, then one rider in each grouping will have an accessible route of travel up to and around it.

Example 2: If an activity is defined as gathering at an outdoor classroom and the seating area is made of logs set in a circle, then there must be an accessible route of travel to the log circle and to a sitting place in the circle for a child using a wheelchair.

Surfacing. Surfaces under and around accessible play equipment and other play equipment in the play area shall be firm, stable, and slip resistant, and where within the use zone of equipment, resilient. Recognizing the need for freedom to design, the equipment use zone can be surfaced partially or entirely with an accessible surface.

Where an owner/operator or designer elects not to surround the equipment with accessible surfacing, it is necessary to design the play area in such a way as to provide an accessible play experience which is completely integrated into the entire play area.

Edging. The subcommittee recognizes the potential tripping hazard created when firm, stable, and slip resistant materials are surrounded by loose fill material. We also recognize the potential tripping hazard caused by raised edging or depressions intended to alert the path user of changes in ground surface or elevation. These issues require further research by the Access Board. Specifically:

1. Is edging really necessary to define edges or warn about changes in levels or surfaces for safety? If so, what function should it perform - guidance, warning or both?

2. If edging is necessary, what design parameters are required?

Auxiliary Path. A good play setting has many routes through the space. A route itself may be the play experience. The routes should vary in size, shape and texture to provide a particular play experience. Minimum routes through a play experience should be exempt from the requirements of the primary accessible route of travel to promote the range of challenges necessary for a variety of developmentally appropriate play experiences.

So long as the auxiliary pathway is limited in length, it does not have to conform to accessible route requirements. Social interaction and a challenging play experience are attainable because the auxiliary route must be in close proximity to the accessible route.

Example 1: If an auxiliary route is designed to create a jungle nature experience, the path may be textured in places to create a bumpy experience and plants may intrude on the pathway sides and overhead to create a jungle feel.

Example 2: A daycare center may want a trike path with bumps or textures on it to create different trike riding textures for developmental reasons. If the trike path is not the main accessible route of travel, it may be textured. If it is the main route of travel and an auxiliary route cannot be created, then surface texture which does not meet ADAAG cannot be provided.

6.3 PLAY EQUIPMENT ACCESS

6.3.1 Scoping. Where equipment is used to provide a play activity, a manner of getting on, through, and off the equipment must be included. This manner of access may include one or more of the methods below. Any other method which ensures as effective a manner of getting on, through, and off the equipment for children with a range of mobility impairments is acceptable.

6.3.2 Technical Requirements

1. Ramps: If the width of the ramp is 60" or greater, then all ADAAG requirements apply except for the handrail requirements. If ramp width is less than 60" the following criteria apply:

a. Minimum width of 36".

b. Cross slope not to exceed 1:50.

c. Running slope not to exceed 1:12.

d. Ramp run or length not to exceed 12'.

e. Landings at bottom and top of ramp run shall be a minimum of 60" in diameter.

f. Landings which contain play activities shall include a minimum of 30" x 48" clear space where a wheelchair user may park and play at the component. A parked wheelchair must not reduce the adjacent circulation path to less than 36".

g. The edges of ramps and landings shall have a means of preventing wheelchairs from falling off the landing.

h. Handrails shall be provided on each side of the ramp at 26-28" above the ramp surface.

i. Where ramped access is provided to an elevated play component, wheelchair parking spaces may overlap turning space.

2. Transferring Onto Equipment: A person in a wheelchair may transfer themselves onto play equipment at a transfer platform. A transfer platform must be located along an accessible route of

travel. It is provided to allow a wheelchair user the ability to leave the wheelchair and attain access onto play equipment or into an activity area. It shall comply with the following specifications:

a. The deck used as a transfer platform shall be 11-14" above the ground when designed for use by 2- to 5- year-olds, and 14-17" above the ground when designed for use by 5- to 12-year-olds.

b. The minimum clear width of the deck used in the transfer system shall be 24" and the minimum depth of the platform shall be 14".

c. A means to assist the child in transferring, i.e., a grab bar or handhold, must be provided.

d. Adjacent steps or decks from the transfer platform which are used to move through the equipment should have a maximum rise of 6" for children under 5 years old and a maximum rise of 8" for children over 5 years old.

e. The transfer system must be made of a material which will not cut, scrape or burn the skin when sliding over.

f. A minimum of one 30" x 48" wheelchair parking space shall be provided adjacent to the transfer platform. Wheelchair parking spaces may overlap turning spaces.

g. Turning Space: A space which allows a wheelchair to turn around shall be provided at the base of the transfer platform. The turning space shall be off the accessible route of travel and have a clear space of 60" in diameter or a T-shaped area. A parking area of 30" x 48" for the wheelchair adjacent to the transfer platform off of the route of travel must be provided. Turning space and parking space may overlap. The parking space at the transfer platform shall accommodate a minimum of one wheelchair and shall not reduce the circulation path to less than 36". If additional parking spaces are added, each one shall be 30" wide by 48" long and shall be adjacent to the accessible route of travel.

3. Decked Platforms: Decks may be used in the transfer system as transfer platforms themselves or in conjunction with transfer platforms (steps) to provide access.

4. Berms: Berms or natural hills may be used to provide an accessible route of travel up to and onto equipment. These features must conform to applicable safety standards.

6.3.3 Rationale

Access to Play Equipment. Play equipment is designed to provide physical challenge as well as social interaction. For equipment to be appropriate for different skill levels, it must be graduated in its challenge opportunities. Access up to, onto, through, and off equipment should also provide a variety of challenge levels appropriate to the age of the intended users.

Ramps. Ramps onto play equipment become play components themselves and must be designed to fit into the play structure. A ramp longer than 12' is a spatial and visual imposition on the landscape and cannot effectively be integrated into the play opportunities. Ramps may also become barriers to play because they can constrict circulation and flow.

Transfer System. A transfer platform is one way to access equipment from a wheelchair. It allows a child to transfer between a wheelchair and the play structure. The transfer platform must be on an accessible path of travel.

A clear level area or turning space must be provided on one side of the transfer platform to allow for a front or side transfer.

For each transfer platform there must be a space adjacent to an accessible path of travel, where a child's wheelchair can be left while he or she is on the play structure. There must be no more than a 6" rise for younger children, and an 8" rise for older children, between adjacent accessible deck surfaces which lead to and throughout the main structure.

6.4 EQUIPMENT AND PLAY COMPONENTS ON THE GROUND PLANE

6.4.1 Scoping. Where equipment is provided on the ground level, at least one of each like or similar play activity provided shall be accessible to and usable by children with disabilities.

6.4.2 Technical Requirements

1. An accessible ground level play activity shall be located adjacent to an accessible route of travel.

2. An accessible ground level play activity shall be surrounded by a surface which is firm, stable, and slip-resistant, and where within the use zone of equipment, resilient as described by the ASTM F1292 performance standard. Surface material, when crawled upon, should not cut, scrape, or abrade the skin.

3. Where play activities provide a like or similar experience and are in close proximity, a minimum of one shall be accessible.

6.4.3 Rationale. In recognition of the diversity of equipment which can be placed on the ground in a playground, as well as the need to promote social interaction while not unnecessarily duplicating play components, only one of each type of component provided on the ground plane needs to be accessible.

6.5 EQUIPMENT AND PLAY ACTIVITIES ELEVATED ABOVE THE SURFACE IN A LARGE COMPOSITE PLAY STRUCTURE

6.5.1 Scoping. A larger play structure is defined as having 12 or more elevated play components. Where there are 12 or more elevated play components on a composite structure, or where there are 12 or more elevated play components at one site serving the same age group, both a ramp and transfer system are required.

6.5.2 Technical Requirements

1. A ramp is required to access a minimum of one-half of the play components on the structure.

2. One-half of those components which are accessible by the ramp shall be like or similar to those elevated components which are not accessible by ramp.

3. A transfer system is required to access a minimum of one-half of the play components on the structure.

4. Where a sliding experience is provided, at least one shall be accessible by ramp. A transfer system may be used in conjunction with a ramp to enable the use of the slide.

5. A transfer platform shall be provided on elevated surfaces when the adjacent wheelchair parking space cannot overlap the turning space. A parking space adjacent to a play component/event/activity can overlap the turning space as long as a minimum of 36" of circulation space is maintained.

6.5.3 Rationale

Play Structure Size. Many play areas, such as those in home day care centers and restaurants, are small and have limited resources. The number of play activities on a structure is a means of determining the size of the structure. Twelve elevated play components seems to be the range for a mid-sized composite play structure. It is advisable to seek public comment on this scoping trigger, and determine if 12, or a lower number such as 9, or a higher number such as 15, is a more adequate trigger. On the subject of which play activities are accessed by transfer systems, this language permits several choices. An entity may elect to have the same components which are accessed by ramp also be accessed by transfer. The entity may have those not accessed by ramp be accessed by transfer. Or the entity may have some combination which results in ramp and transfer access to some components, ramp only to some components, and transfer to some components.

Like or Similar Play Components. It is not necessary for every elevated play activity which is not directly accessible by ramp to be duplicated at a level with vertical access. All play components may not be accessible to all users, consistent with the policy statement. However, some of the same type of play experiences or sensations shall be accessible in order to provide as much quality as possible. These

contrary notions have been addressed with like or similar language. Selecting one-half of those which are accessible as the trigger for like and similar allows for most experiences to be duplicated. It also permits design creativity in establishing challenging play experiences. For example, a guardrail is not considered a play component but a barrier. A pipe wall is a barrier but can also be an activity because of the amount of enclosure. Decks, steps/ladders, posts and other structural components should be excluded. All activity panels with the same level of challenge are considered like and similar. It is unnecessary and undesirable to have two or more tic tac toes or two bubble panels, etc.

Sliding. The sliding experience is one activity on the play area which requires height to participate. Swinging, climbing and rocking can occur in a play area on the ground plane. Sliding, however, cannot occur on the ground plane, since it requires elevation. When slides are provided, they shall be accessible or a like or similar sliding experience which is accessible shall be provided. Some types of slides cannot be duplicated at lower heights. Therefore, some latitude must be given when considering like and similar sliding experiences. The important factor is to provide the experience or sensation of sliding.

6.6 EQUIPMENT AND PLAY ACTIVITIES ELEVATED ABOVE THE SURFACE IN A SMALL COMPOSITE PLAY STRUCTURE

6.6.1 Scope. A small play structure is defined as having less than 12 elevated play components. Small play structures are not required to have a ramp, but must provide ground level access to promote social interaction.

6.6.2 Technical Requirements

1. Ground level access to all different ground level play components.

2. A minimum of one-half of the elevated play components shall be accessible through a transfer system.

3. One-half or more of those play components which are accessible by transfer shall be like or similar to those elevated components which are not accessible by transfer systems.

4. Where a sliding experience is provided, at least one shall be accessible by transfer systems.

6.6.3 Rationale. Even on smaller structures, accessing height is an important opportunity. Transfer systems can effectively allow vertical access for some children with disabilities in a playground. The same like or similar language is applied, as is the slide requirement.

6.7 SWINGS

6.7.1 Scoping. One swing in each group of swings should be surfaced with accessible, protective surfacing. Two functions are necessary for swing access: 1) Swinging: provide access up to the swing for transferring onto it, and 2) Pushing: provide a place to push a swing from a firm, stable, slip-resistant, and resilient surface. Seats that provide body support should also be considered.

6.7.2 Technical Requirements

1. One swing in each grouping of swings should be surfaced with accessible protective surfacing.

2. A 30" x 48" parking space for a wheelchair is required outside of the swing seat use zone.

3. A continuous firm, stable, slip-resistant, and resilient surfacing under the full arch of the swing should be provided.

4. Two turn-around spaces along the route of the swing are required; one for accessing the swing seat and one for pushing the swing 4' beyond the maximum extension of the swing arch.

5. Other designs which meet the intent of the concept are acceptable.

6.7.3 Rationale. Two functions must be met for all swing areas: 1) getting onto the swing, and 2) pushing the swing. Not all swings have to be made accessible. If the accessible surfacing is going to extend beyond 30" to the front of the swing it should then extend the entire use arch. A child falling on

the edge where the unitary and loose fill materials come together can be hazardous. Presently, no swing seats exist that conform to current safety standards and allow a wheelchair user to remain in their chair while swinging. Therefore, assistance is needed in transferring onto swing seats.

6.8 WATER PLAY

6.8.1 Scoping. If a water play area is provided, a part of the area must be wheelchair accessible. If the water source is manipulated by children, then it must be usable by all children. If loose parts such as buckets are provided and children have access to the equipment storage, then the storage must be usable by all children.

6.8.2 Technical Requirements. When water is provided for play, the following dimensions apply:

1. Forward reach: 36" - 20"

2. Side reach: 36" - 20"

3. Clear space: 36" x 55" The clear space should be located at the part of the water play area where the most water play will occur. If the water source is part of the active play area and children turn the water on and off then it must be accessible. If the water source is part of a spray pool, the area under the spray should be accessible. Accessibility should involve the dimensions for both clear space and reach.

4. Clearance ranges: top height to access water 30" maximum, under clearance 27" minimum.

6.8.3 Rationale: Water Play. This clear space is larger than adult size because water play will require movement, not passive sitting. Dimensions used are based on the "Recommendations for Accessibility Standards for Children's Environments," January 1992.

6.9 SAND PLAY AREAS

6.9.1 Scoping. If a sand play area is provided, part of it must be accessible. Important elements are clear floor space, maneuvering room, reach and clearance ranges, and operating mechanisms (for control of sand flow). When products such as buckets and shovels will likely be used in the sand play area, storage places shall be at accessible reach range.

Raised sand play is a very limiting play experience because of the way a raised area must be constructed. To provide a place for the wheelchair under the sand shelf, there is very little depth of sand available for play. Therefore, a raised sand area by itself is not a substitution for full body sand play. All sand play opportunities on the site should be made as usable by all children as much as possible.

6.9.2 Technical Requirements

1. Sand at Ground Level: If the sand area is designed to allow children to play inside the area, a place within the sand play area shall be provided where a participant can rest or lean against a firm, stationary back support in close proximity with the main activity area.

Back support can be provided by any vertical surface that is a minimum height of 12" and a minimum width of 6-15", depending on the size of the child. Back support can be a boulder, a log, or a post which is holding up a shade structure.

A transfer system into a sand area may also be necessary if the area is large and contains a variety of sand activities. A transfer system would be appropriate if there are no areas of raised sand play in the primary activity area, or if the sand area is over 100 square feet and the raised sand area would tend to isolate accessible sand play activities.

2. Raised Sand Play: When raised sand is provided, the following clearance ranges apply:

- Top height to sand: 30" - 34" maximum
- Under clearance: 27" minimum
- Side reach: 36" - 20"
- Forward reach: 36" - 20"
- Clear space for wheelchair: 36" x 55"

3. Shade Sand Areas: Depending on the site conditions and the amount of sand play, shade may be required. If shade is required by site conditions, it may be provided through a variety of means, such as trees, tents, umbrellas, structures, etc.

This advisory requirement for shade is based on site context, program, and users. Some shade in or around sand is usually desirable.

6.9.3 **Rationale: Sand Play Dimensions.** Dimensions indicated are based on the "Recommendations for Accessibility Standards For Children's Environments," January 1992.

6.10 GATHERING PLACES

6.10.1 Scoping. If gathering places are provided, a portion of them should be accessible. A gathering place contains fixed elements to support play, eating, watching, talking, or assembling for a programmed activity. Gathering places should serve people of all ages.

6.10.2 Technical Requirements

1. Seating: Formal seating refers to manufactured site furniture. Informal seating can be rocks, logs, etc. Only formal seating would adhere to the criteria below. These criteria apply only if seating is provided.

- Along accessible routes: Where benches are provided in a play area setting for rest and recreation by adults and children, these shall be adjacent to the accessible route to activities. Each bench shall have a backrest and arm supports. Arm supports shall meet ASTM requirements for entrapment. The bench layout shall conform to the trails subcommittee guidelines for urban areas.

- Along auxiliary routes: Where benches are provided along an auxiliary route, a minimum of one or 50%, whichever is greater, shall include a backrest and arm supports. Issues here are height of seat, parking space for vacated wheelchair, and clear ground space.

Example: An auxiliary route has three benches. One is the minimum while 50% of 3 equals 1.5 benches, which would require that two benches be accessible with arm support and backrests.

- As part of a program area: Where seating is used as part of a program area in combination with work or eating tables, benches used by children shall have backs and arms and have the following heights:

  Pre-kindergarten bench seat height: 8-12" (203 to 305 mm)

  Kindergarten and older bench seat height: 12-17" (305 to 432 mm)

2. Tables: Where tables are provided, a variety of sizes and seating arrangements should be provided.

Tables, counters, and work surfaces provided for children in wheelchairs shall have clear knee space 24" (610 mm) high, 24" (610 mm) deep, and 30" (760 mm) wide.

The tops of tables and work surfaces used by children shall be a maximum of 2" (51 mm) higher than the upper end of the knee clearance range from the floor or ground.

Every fixed picnic table installed shall be accessible.

Dimensions for children are: 27" minimum clear underneath, 12" depth, 30" maximum to top of table, and 36" wide space for chair.

- Temporary or portable tables shall comply with this requirement to the maximum extent feasible.

- A variety of seat choices shall be made available in fixed benches. (Front, side, etc. See Game Tables.)

3. Game Tables: Game tables provide a place for 2-4 people to play board games.

Where fewer than five game tables are provided, a minimum of one game table (four-sided) shall include an accessible space on one side. Height and clearance would be similar to above table requirements for children. See trails section for adult measurements.

Where five or more game tables are provided:

- A minimum of one, or 10% (whichever is greater) of the tables shall have two accessible seat spaces.

• A minimum of two, or 10% (whichever is greater) shall have one accessible seat space.

4. Storage: If storage is supplied as part of a gathering area and the storage is used by children, accessible shelves and hooks shall be a maximum of 36" above the ground. The amount of storage is dependent upon program requirements.

5. Shade: Shade may be desirable for gathering areas where people will be participating in activities over a long period of time. Shade can be provided in a variety of means such as trees, canopies, or trellises, depending on site context.

6.10.3 Rationale: Dimensions. Dimensions indicated are based on the "Recommendations for Accessibility Standards for Children's Environments," January 1992.

6.11 GARDEN SETTINGS

6.11.1 Scoping. Gardens in play areas are primarily used to provide the program activity of planting, tending, and harvesting vegetation.

Depending on the type and height of plantings, planter boxes may require a raised area for access or a transfer point. A garden must provide a minimum of one accessible gardening area.

6.11.2 Technical Requirements

1. Raised Gardens: If a raised area is provided, then:

• The raised area should be located as part of the main garden area. The amount of raised area is determined by the program, but a minimum of 10% of the garden should be raised.

• The edge shall be raised above the ground surface to a minimum of 20" and a maximum of 30".

• Garden growing area shall require access either by side or by forward reach 36"-20" above the ground.

2. Ground-Level Gardens: If children are required to sit in the dirt to garden, a transfer point shall be provided which enables a participant to transfer into the garden.

3. Potting and Maintenance Areas:

• Potting and preparation areas shall require access either by forward or side reach. The amount of area to be made accessible depends on the program. At least one work station for potting should be made accessible.

• Storage areas for the garden should provide access for children who use wheelchairs. Hooks and shelves should be a maximum of 36" off the ground.

4. Circulation: Aisles around the garden should provide access for movement as well as working. A minimum of 44" should be provided on a main aisle so a child using a wheelchair or walker can get to the garden. This larger aisle should also provide access to the accessible gardening spaces.

6.12 VEGETATION, TREES, AND TOPOGRAPHY

Vegetation, trees, and topography are important features in a play setting. These features should be integrated into the flow of play activities and spaces, or they can be play features in themselves.

If they are used as a feature, a means should be provided for access up to and around the feature. Tree grates and other site furniture which support or protect the feature must also be selected so as not to entrap wheels, canes, crutch tips, etc.

6.13 SOFT CONTAINED PLAY SYSTEMS

Soft contained equipment has an external structure where all play activities are internal to the structure. The key is entry into these environments and movement around these structures. Soft contained play systems shall be accessible and provide integration. These types of play environments are relatively new and the ASTM F1536 committee is currently developing standards. This committee is encouraged to comment during the rulemaking process.

6.14 ENTRANCES

6.14.1 Scoping. Entrances are transition zones which help orient, inform, and introduce users to the site. They are places where people can meet and are locations for displaying information. Not all play areas have defined entrances. Sometimes entry to a play area can occur from 360 degrees.

6.14.2 Technical Requirements

Doors and Gates: Where doors and gates are provided as an entrance to the play area setting, the following criteria apply:

1. Hardware shall be mounted at adult heights as per ADAAG, but when it is appropriate for children to operate the door or gate, hardware shall be mounted at heights for adults and for children (30"-34").

2. Door opening force: shall not exceed 3 lbs. for environments intended primarily for children aged five or less, and shall not exceed 5 lbs. for environments intended primarily for children older than 5 years.

3. The door kickplate will be located 10" from the bottom of the door, and it will be smooth, solid, and uninterrupted. (See California title 24)

6.14.3 Rationale: 30" - 34" Mounting Height. Dimensions are based on the "Recommendations for Accessibility Standards For Children's Environments," January 1992.

6.15 SIGNAGE

Signage is a visual, tactile, or auditory means of conveying information when provided. In an environment used by children, signs shall primarily communicate graphically. Talking signs are permissible. All other ADAAG provisions apply.

6.16 CHEMICAL MAINTENANCE OF THE PLAY AREA

Where chemical treatment of natural areas or facilities is applied for pest control, weed control, or cleaning, signage shall be placed at the perimeter of the area treated. The signage shall indicate the area of treatment and date of treatment. The number of signs will be determined by the size of the facility, with a minimum of one sign at each designated entry area.

6.17 SAFETY AND ACCESS

6.17.1 Scoping. Where equipment or any play element is provided, access to equipment shall conform to existing safety requirements, such as ASTM F1487-93, when those requirements are based upon actual risk and anthropometric data.

6.17.2 Technical Requirements. Safety criteria can be used to modify access considerations if the conflict between safety and access can be demonstrated and documented. Access criteria can be used to modify safety criteria if it can be demonstrated that an unsafe condition is mitigated.

6.17.3 Rationale. Safety considerations and provisions for access can sometimes conflict. When this occurs, it is irresponsible to proceed with a technical requirement which may cause harm because of a contextual issue. On the other hand, some safety requirements unnecessarily create barriers. For example, a raised sand shelf could be considered hazardous because the raised area is over 20" off the ground. Strict enforcement of safety requirements could lead to a non-climbable enclosure on the edge, preventing use of the raised sand shelf by some children. These codes must have a mechanism by which changes can be made because of a site condition. To ensure this section is not used to eliminate access, the safety condition must be documented, and this documentation must include discussion of methods or techniques to eliminate or minimize the safety condition present.

6.18 CONSULTATION AND DOCUMENTATION

6.18.1 Scoping. Every new play area development shall require consultation between the entity which will operate the playground, the selected manufacturer or designer, and people with and without disabilities who reside in the community.

6.18.2 Technical Requirements. The following requirements shall become part of the records for the play area:

1. Documentation of the accessible route of travel shall be provided.

2. Documentation of the accessible point of access for elevated equipment, and an accessible egress for elevated equipment shall be provided when egress occurs on a surface which is not firm, stable, and slip-resistant. Documentation of the provision of a means of return to the point of ingress from the point of egress shall be provided.

3. Where 12 or more elevated play components are provided, documentation of the provision of play components which are accessible by ramp and are like or similar to play components which are not accessible by ramp, shall be provided.

4. Where 12 or more elevated play components are provided, documentation of the provision of play components which are accessible by transfer systems and are like or similar to play components which are not accessible by transfer systems, shall be provided.

6.18.3 Rationale. Participation is important in new projects, especially where the play area is a community asset. Comment by manufacturers, designers, and agencies indicates that such involvement is often sought and is not a radical departure from present practice.

G O L F S U B C O M M I T T E E

OVERVIEW ON GOLF
NEW CONSTRUCTION
ALTERATIONS TO EXISTING GOLF COURSES
NEW CONSTRUCTION: MINIATURE GOLF

☛ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

OVERVIEW ON GOLF

The purpose of this overview is to provide supplemental information to complement the proposed guidelines developed for the game of golf by the Golf subcommittee under the Recreation Access Advisory Committee. The subcommittee encourages the acceptance of the proposed guidelines and hopes they will be adopted to supplement the Americans with Disabilities Act Accessibility Guidelines as they relate to the architectural design and alteration of golf courses and related elements. The proposed guidelines also address stand-alone golf ranges and miniature golf courses.

The Game

Where and how the game of golf originated, we really don't know. Golf has existed as a game for hundreds of years. Dutch literature referred to golf-like games as early as the 13th century. The Game of Golf is defined as "playing a ball from the teeing ground into the hole by a stroke or successive strokes in accordance with the rules." The game is played in the open air, on courses designed by nature and shaped by golf architects. The first courses were known as "links" because they linked the arable land to the sea. Fundamental to the game is the philosophical premise: Play the course as you find it; play the ball as it lies. Also, an underlying foundation is "the game was never intended to be fair." The play of the game is a recreational activity that combines the elements of terrain and weather with skill and luck under conditions where all elements can be good or bad.

Golf is a game played on a field with no rigid dimensions. This lack of dimension is the direct result of the size of the playing field on which golf is played. An 18-hole golf course typically requires well more than 100 acres. Such a large area is far more difficult to standardize than the relatively small spaces of a football field or a tennis court.

Golfers--and non-golfers alike--cherish that fact, for the endless variety of golf layouts has added much to the charm and interest of the sport. It also has added even more to the challenge of mastering the sport. It has added invaluably to the uniqueness of the sport.

In the beginning, nature developed and maintained golf courses. Every aspect of the golf course, from fairways and greens to roughs and hazards, was the result of natural forces.

Bunkers, for example, originally were scars on the links (seaside golf courses) caused by livestock sheltering behind hillocks or gardeners quarrying seashells. In time, numerous divots in hollows where balls came to rest in large numbers also caused some bunkers. Greenskeepers began to modify and stabilize the scars. This practice led to contemporary dramatic bunkering.

Hazards of varying kinds are still a vital part of golf today. They are provided for numerous reasons, such as to test abilities and to add to the spirit of competition. Because they were born of natural forces, they are held in the golf community to be almost sacred.

But hazards do more than simply add a degree of difficulty to the game. Instead, they are the very heart of the game and of the design of its playing fields. Hazards--their types, placement, etc.--are among the primary components that define the very game of golf. They also are at the heart of what perpetuates the uniqueness of the game--the wildly differing philosophies on how a golf course should be designed.

Background

There is too little documentation representing a history of persons with disabilities playing the game. It is generally accepted that golf and people with disabilities began their relationship as the veterans of World War I returned and continued to play despite injury, amputation, etc. However, PGA Champion Tommy Armour had one eye; Ernest Jones one leg; and Jimmy Nichols, who played in six U.S. Opens, had only one arm.

Since World War I, the industry has evolved significantly. The United States is now accepted as the leader in the manufacture of golf equipment, supplies and research. The introduction of golf cars and the advancement of club, shaft and ball technology has significantly increased the opportunity for persons with disabilities to enter the game and play to their own level of ability.

With the passage of the ADA, an even greater number of potential golfers has been identified. This can be mutually beneficial to beginning disabled players and to the industry. Golf is a sport that is inclusionary in nature. When certain criteria are met, such as establishing an individual USGA Golf Handicap Index, people with disabilities and able-bodied can play and compete equally on any course at any time.

The Process

The task of implementing the ADA into golf started before the Recreation Access Advisory Committee was formed. While individuals had made their interpretations of the ADA and golf, the initial National Forum on Accessible Golf (NFAG) was convened in February of 1993. It brought together representatives from the golf industry, the academic community, associations representing disabled golfers, accessibility specialists, the Department of Justice and individual disabled golfers.

The focus of the Forum was to define the fundamental nature and essence of the game. After several days of deliberations, agreement was reached that there was no difference in the play of the game for persons with disabilities. Access is required to make a stroke from a tee and be able to play successive strokes until the ball is holed.

When the subcommittee on Golf was established, under the Recreation Advisory Committee, this philosophy was adopted and guided our efforts. The mission was to define proposed architectural guidelines that would facilitate the integration of people with disabilities into golf while maintaining the tradition and integrity of the game.

The subcommittee has met formally and informally to ensure that input from all identified sources has been captured, considered and utilized in meeting its mission. Six formal meetings have been held in geographically diverse sites to enable all interested parties to provide commentary for deliberations. Also during this period, the second National Forum on Accessible Golf met to specifically identify architectural issues relative to the design of new golf facilities.

The Golf subcommittee acknowledges and expresses its gratitude to the following national organizations which contributed to the formulation of the Golf subcommittee's recommended guidelines:

1. The Professional Golfers' Association of America

2. The Golf Course Superintendents' Association of America

3. American Society of Golf Course Architects

4. National Center on Accessibility (Indiana University)

5. The Association of Disabled American Golfers

6. The National Golf Course Owners Association

7. Club Corporation, International

Also, the subcommittee received input from the following organizations through their attendance at the Golf Forums conducted by the National Center on Accessibility (Indiana University) which members of the Golf subcommittee also attended:

1. National Amputee Golf Association
2. Ladies Professional Golf Association
3. United States Blind Golfers Association
4. National Golf Foundation
5. United States Golf Association

The Golf subcommittee acknowledges the guidance received from Peggy Greenwell and Paul Beatty of the Access Board, both of whom attended some of our subcommittee meetings.

Research

The Association of Disabled Golfers and the Greens Section of the United States Golf Association are pursuing a course of research relative to the impact of assistive devices to golf course turf and soil. This research may result in a standardized model to assist in the local accessibility decision making process. However, USGA advises that until that model is achieved, local decisions on access to greens and fairways rest solely with the golf course superintendent.

The Golf Course Superintendents' Association of America (GCSAA) has also stated it is ready to commit its resources to researching the potential long-term impact of assistive devices (wheelchairs, crutches, etc.) on sensitive turfgrass areas. If appropriate, this research possibly could be conducted in conjunction with USGA research efforts. These research efforts would propose to arrive at quantitative, scientifically accepted results based on a wide degree of agronomic considerations and conditions and/or discovery of new tools and assistive devices that would provide disabled golfers better accessibility.

Accessibility

In 1991, the PGA of America formalized a working relationship with Special Olympics International in Washington, D.C., to introduce golf as the 23rd Special Olympics competitive sport. A Special Olympics Sports Skills Guide was written and published by the PGA and training programs were held to teach PGA golf professionals and amateur coaches how to teach golf to Special Olympics athletes.

For several years the PGA has supported the National Amputee Golf Association in holding First Swing Clinics at VA hospitals around the country. The clinics teach physical therapists how to use golf as a therapeutic and rehabilitative sport.

It is clear that merging these completed initiatives, with the implementation of the supplemental architectural guidelines of golf with ADAAG, will result in greater accessibility to the game.

Overview Analysis of the Recommended Guidelines

A golf facility generally consists of several distinct and discrete elements. The clubhouse often includes food and beverage, meeting and retail functions. The golf course includes the area of play. In preparation of these guidelines, the subcommittee determined that the primary functions of the clubhouse and golf course are defined so differently, each should be considered separately. Therefore, for any clubhouse which is determined to be a covered entity under ADA, all ADAAG provisions apply and must be implemented. The proposed guidelines for golf, as developed by the subcommittee while using ADAAG where applicable, have been developed for the golf course and related golf amenities.

Definitions

The definitions in the proposed guidelines are understood by and commonly used in the golf industry. This will facilitate timely implementation of the approved guidelines. The Golf subcommittee recognizes, however, that an individual who is not familiar with golf may experience an unfamiliar lexicon when reviewing this material. For example, "through the green" is a defined identifiable physical location; "rub of the green" refers to events of play, such as a ball deflected by an "outside agency" or luck, good or bad. These definitions have been established and published for many years by the USGA.

Accessible Route

There is no defined continuous accessible route for golf courses. The flight and landing of a golf ball is unpredictable, unique to the skill level of the player. Therefore, an accessible route to any particular ball or location is unpredictable and without meaning. The focus of the Golf subcommittee was to provide access for a disabled golfer to his ball or other location on the course unless a Rule of Golf allows for relief. Because play of the game is on grass or other naturally occurring surface, the Golf subcommittee believes this approach through the proposed guidelines makes the game accessible without defining an access route.

In addition to the course or area designated for play, other sites may be available to the players. These might include drop areas, toilets, snack facilities, weather shelters, etc. The subcommittee believes that the more severely a golfer is disabled, the greater the requirement for the use of a golf car will become. Therefore, the subcommittee determined such specific defined elements should have an accessible route from the golf car path, if such paths are provided.

Golf Cars

A program issue, outside the purview of the Golf subcommittee, that should be referred to the Department of Justice, is golf cars. The issue is whether a golf facility that requires the mandatory use of golf cars will be required to provide special adapted cars for persons with disabilities. The question is whether these adapted golf cars should be provided by the facility or the individuals with disabilities. If the decision is that this is the facilities' responsibility, what adaptations are needed to accommodate all disabilities, and what entity would make this decision and inform all golf course owners/operators? Another issue is liability if a golf car is modified and safety is impaired. Discussion with one major golf car manufacturer indicated the golf car companies might prefer to make the modifications if they were told which ones were necessary.

The proposed guidelines of the Golf subcommittee have as an underlying premise that the game of golf played by persons with disabilities will be via the use of a golf car or similar means of mobility. The primary rationale for these assumptions is that:

a. it is unrealistic to believe that persons with severe mobility impairments will be able to play a round of golf via manual ambulation -- manual wheelchair, crutches, walker, etc. "Golf" as the subcommittee has defined it includes play on a regulation 18 hole course. This expectation is based on the need to maintain speed of play requirements fundamental to the successful completion of a round of golf within expected time frames. It is noted that there are other golf options available that may not require the use of a golf car, including miniature and par three courses and golf ranges.

b. an accessible route throughout the regulation golf course is impossible to achieve. Accessing ones' ball without the assistance of a golf car or similar device would be impracticable and often impossible for many golfers with disabilities.

In the May 20, 1994, meeting of the Recreation Advisory Committee, Department of Justice (DOJ) attorneys indicated that they believed that:

a. a golf car would be considered an auxiliary aid rather than a personal assistive device.

b. if a golf course provides golf cars for the general populations, then they would have a responsibility to provide golf cars with adaptive devices for golfers who require them.

The major question, then, is "What adaptive devices would or should the golf course be required to provide?"

The outcome on this issue during the May 20 meeting was inconclusive. However, DOJ indicated that throughout the implementation of the ADA there have been numerous situations where resolutions do not include all persons with disabilities. Resolutions are generally based on impact on the greatest number of persons affected, e.g., devices that would seem to serve the greatest number of disabled golfers. DOJ used the analogy of rental car companies who are required to provide hand controls when requested by a person renting a vehicle. While hand controls will not accommodate

all persons with mobility impairments, they are deemed to have the widest applicability.

There would appear to be several possible options and/or adaptive features that might enhance a golfer with a mobility impairment in playing the game, using a golf car; they include:

a. hand controls,

b. swivel seat (right and/or left side) for the purpose of entering, exiting or playing from the car,

c. adaptation or add-on device for wheelchair storage/transport, and

d. grab bars or similar devices to assist an individual in transferring in and out of the car.

At this time there appears to be insufficient information or opinion on what adaptations would seem to be necessary for most disabled golfers. There is currently no body of knowledge regarding numbers and types of disabilities that are represented by individuals who play golf, nor is there information on the types of adaptations that they require or might require to successfully and independently maneuver a golf car.

Therefore, it appears premature to make recommendations on what golf courses may be required to provide in the way of golf car adaptations. Even though rental car companies routinely provide hand controls upon request, it is unclear if hand controls would be a necessary adaptation to the golf car.

Several strategies appear to be necessary prior to recommendations being made on golf course-required adaptations to golf cars:

a. Contact with the major and emerging golf car manufacturers regarding what, if anything, they are doing regarding adaptations; what, if any, types of requests they have had for car alterations for accessibility purposes; what, if any, concerns do they have (e.g. liability/warranty); and what, if any, market do they see in adapting golf cars.

b. Survey research with golfers having disabilities to determine types of modifications and/or adaptations for golf cars that should be required.

Practice Areas

Where provided, these elements are constructed for the improvement of the skill level of the player. The subcommittee deemed such areas to be so critical to full inclusion of the disabled player, that a greater emphasis was placed on these requirements and guidelines.

Conclusion

The subcommittee has developed these guidelines with a great amount of input from persons with disabilities and the organizations that administer the game of golf. All of the language in the proposed guidelines has been arrived at and agreed to by representatives of both of these groups. Because of this mutual and cooperative effort, the Golf subcommittee believes that these guidelines, when adopted and approved, in conjunction with other initiatives currently being addressed, will greatly integrate all persons with disabilities who choose to participate into the game of golf.

NEW CONSTRUCTION: RECOMMENDED CHANGES TO EXISTING ADAAG PROVISIONS

DEFINITIONS:

4.6.2 Parking; *Location.* Accessible parking spaces serving a particular building or recreational facility grounds shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. In parking facilities that do not serve a particular building or recreational facility grounds, accessible parking shall be located on the shortest accessible route of travel to an accessible pedestrian entrance of the parking facility. In buildings or recreational facility grounds with multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located closest to the accessible entrances.

Rationale: Current provisions provide only for buildings and not specific recreational grounds such as golf courses.

4.6.2 *Passenger Loading Zones.* Amend to include "drop-off" areas at recreational facilities, such as golf bag drops.

Rationale: Conform provisions to common golf practices.

4.1.2(6) and 4.22 *Toilet Rooms.* Include verbiage to ensure that adequate accessibility to toilet rooms from golf car paths is achieved.

Rationale: To clarify this issue, which appears to be gray.

SCOPING PROVISIONS
(4.1.1-4.1.7)

4.6.2 Parking; Location. Add reference to golf courses.

Rationale: Provide that golf course parking areas fall under the same accessibility provisions as other facilities.

4.6.6 Passenger Loading Zones. Add reference to recreational activities, such as bag drops.

Rationale: Clarify that bag drops are currently covered by ADAAG.

4.22 Toilet Rooms. Add statement relating to accessibility to toilet rooms from golf car paths.

Rationale: Clarify that such accessibility is or should be included in ADAAG.

4.3 Accessible Route. A golf course will not be required to have an accessible route for play of the game of golf through the green. However, most amenities and elements of the golf course (such as toilet rooms, snack bars, tees, greens, weather shelters, etc.) shall be accessible from the golf car path, or the golf car parking area, if paths or such areas are provided.

Rationale: There is no definition in the rules of golf for fairways, roughs, etc., which comprise the route of play. Since a player's route of play through the green is dictated by where they hit the ball, coupled with the fact that cross slopes of fairways frequently exceed 1:20, an accessible route cannot be provided through the green. Severe terrain through the green frequently prohibits an accessible route. Attempting to provide fairways not exceeding 1:20, nor severe terrain, would fundamentally alter the nature of the game of golf.

One teeing ground on each hole would have to be accessible, but not all teeing grounds. Bunkers and hazards are not accessible.

Requiring all elements on a golf course to be accessible would in essence "flatten" the course and alter the fundamental nature of the game.

On golf courses where golf cars are not utilized, the above car parking area shall instead be an area with a minimum 10′ x 10′ dimension that provides an access route to the teeing ground and green.

Rationale: At golf courses without golf cars, or golf car paths, an individual with a disability might bring his/her own golf car and would require parking areas that provides access to the teeing grounds and the greens.

4.17.1 Toilet Rooms; Location. [same as 4.3.2(2)]

At least one accessible route shall connect accessible buildings, facilities and certain elements (see section 20.2 of this report) that are on a golf course.

Rationale: [same as 4.3 above]

TECHNICAL PROVISIONS
(4.2-4.35 - SECTIONS 5-10)

4.6.2 Parking; Location. Accessible parking spaces serving a particular golf course shall be located on the shortest accessible route of travel from adjacent parking lot to an accessible entrance of the golf course.

Rationale: Most golf facilities do not provide for fully accessible entry to the golf course.

4.6.6 Passenger Loading Zones. Passenger loading zones shall provide an access aisle at least 60 in (1525 mm) wide and 20 ft (240 in) (6100 mm) long adjacent and parallel to the vehicle pull-up space and

shall include areas of temporary occupancy for recreational pursuits, i.e. bag drops at golf courses.

Rationale: Most golf facilities do not provide this feature.

4.22 Toilet Rooms. Where toilet rooms are provided on a golf course, such toilet rooms shall be located on an accessible route from the golf car path, if provided or golf car parking area, if provided, and such route shall be in full compliance with ADAAG 4.3.

Rationale: Not all golf facilities that feature on-course toilet rooms and golf car paths offer an accessible route between the two.

RECOMMENDED ADDITIONS TO ADAAG

3.5 NEW ADAAG DEFINITIONS

Game of Golf. The game of golf consists of playing a ball from the teeing ground into the hole by a stroke or successive strokes in accordance with the rules. Hazards, either natural or manmade, are an integral part of the game of golf.

Rationale: USGA definition.

Golf Course. The "course" is the whole area within which play is permitted.

Rationale: USGA definition. The course includes water hazards, lateral water hazards, ground under repair, and obstructions which are integral parts of the course.

Teeing Ground. The "teeing ground" is the starting place for the hole to be played.

Rationale: USGA definition. To show there are no maximum dimensions.

Teeing Area. It is a rectangular area on the teeing ground which is two club-lengths in depth, the front and sides of which are defined by the outside limits of two tee-markers.

Rationale: USGA definition under "Teeing Ground." To explain how a teeing area differs from the teeing ground.

Practice Area. A piece of ground, other than the golf course itself, that has been designated by local authority, on which players may practice their golf swing, hit balls, chip balls and/or putt. The practice area may include practice bunkers and/or practice greens.

Rationale: No USGA definition.

Through the Green. "Through the green" is the whole area of the golf course except: a) the teeing ground and putting green of the hole being played, and b) all hazards on the course.

"Through the green" consists of "rough" and "fairway." Fairway is grass mowed short on which you try to hit your golf ball. Rough is longer grass at the sides of fairways to penalize a shot not hit on a fairway.

Rationale: USGA definition. There is no definition in the rules of golf for a fairway, or a rough.

Hazard. A "hazard" is any "bunker" or "water hazard."

Rationale: USGA definition.

Bunker. A "bunker" is a hazard consisting of a prepared area of ground, often a hollow, from which turf or soil has been removed and replaced with sand or the like. The margin of a bunker extends vertically downward, but not upwards.

Rationale: USGA definition.

Water Hazard. A "water hazard" is any sea, lake, pond, river, ditch, surface drainage ditch or other open water course (whether or not containing water) and anything of a similar nature.

Rationale: USGA definition.

Putting Green. The "putting green" is all ground of the hole being played which is specially prepared for putting or otherwise defined as such by the committee. (The "Committee" is the local authority for the golf course.)

Rationale: USGA definition.

Practice Green. A practice green is a specially prepared ground for putting on which to practice, but not played as part of the course.

Rationale: No USGA definition.

Weather Shelter. Special structures placed on the golf course to provide shelter for golfers during inclement weather.

Rationale: No USGA definition.

Golf Car Paths. A prepared surface "through the green" which is used as a path for motorized golf cars to operate.

Rationale: No USGA definition.

SCOPING PROVISIONS

20. GOLF COURSES

20.1 General

Every golf course shall comply with the applicable provisions of ADAAG sections 4.1 through 4.35, 5 and 7, and the applicable provisions of this section.

20.2 Golf Course: New Construction

1. In lieu of compliance with ADAAG sections 4.1.2(1), 4.1.2(2) and 4.1.3(1), at least one accessible route complying with 4.3 shall be provided from each accessible element within the golf course (e.g., putting green, weather shelters, course toilet rooms and course snack bars) to a golf car path or golf car parking area or auxiliary aid transfer station, where golf car paths or parking areas are provided. No provisions for accessible routes can be prescribed at golf courses without golf car paths.

Rationale: Golf car paths should not be considered part of an accessible route using the ADAAG definition. These paths fit the lay of the land. As golf car paths are designed for golf cars and not pedestrian traffic, they should not be subject to the ADAAG accessible route provisions. Rather, the access route from the golf car path to each element and/or amenities (such as toilet rooms, half-way houses, some tees, greens, etc.), should be accessible. Not all golf courses have golf car paths. Accessible routes require 1:20 slope and terrain at many courses would not allow 1:20. This would preclude courses requiring mandatory use of golf cars from making golf car paths accessible.

EXCEPTION 1: At teeing grounds, the slope can be between 1:12 and 1:20 without handrails.

EXCEPTION 2: Turfgrass may form the surface of the accessible route.

Rationale: Handrails are not desired through the green, or on, or around teeing grounds and greens, because of the danger of golf balls ricochetting off the rails. Since most amenities are required to be accessible from golf car paths, handrails would not be applicable along those routes.

EXCEPTION 3: ADAAG 4.3.2 does not apply to the playing area of the golf course. It applies to all other areas of the facility.

Rationale: One teeing ground on each hole would have to be accessible, but not every teeing ground on each hole. The exception to ADAAG 4.3.2 is strictly once you get on the "playing area" of the golf course. There is no problem with ADAAG 4.3.2 as it relates to all other areas of the facility (i.e., clubhouse, parking facilities, practice areas, etc.)

APPENDIX: If a golf car path, golf car parking area or auxiliary aid transfer station is located at the accessible golf course element (e.g., located upon the tee) an accessible route is not needed.

Rationale: Since there is no single route or path of travel on the golf course, i.e., the player could literally be anywhere, ADAAG 4.3.2 is not applicable.

Teeing Ground

2. At least one teeing ground on each hole shall be accessible and comply with xx.x However, as many as possible should be made accessible.

APPENDIX: Accessible tee(s) for each hole should be indicated on the scorecard.

Rationale: Because of terrain, environmental considerations, wetlands, etc., all teeing grounds may

not be made accessible. Placing teeing grounds in areas difficult to reach adds to the challenge of golf and this feature of the game should not be destroyed.

Hazards
3. Hazards (e.g., bunkers and water hazards) provided on the golf course are not required to be accessible.

Rationale: It is not desired to destroy the integrity of the design of bunkers to make golf courses challenging, and/or change the fundamental nature of the game. Because of the composition of sand and other materials used in bunkers, most bunkers could not be exited by a wheelchair or golf car. The design of bunkers require "lips" to retain the sand. Accessible bunkers can be provided at practice facilities, since doing so would not change the fundamental nature of the game played on a golf course. Constructing bunkers on a golf course to make them accessible would eliminate the architect's ability to design challenging bunkers and would change the fundamental nature of the game.

Practice bunkers can be made accessible so golfers with disabilities can learn how to hit a ball out of sand bunkers in case they hit their ball into one on the golf course that is accessible. Many bunkers are constructed between greens/fairways and adjoining water or severe terrain to keep less than perfectly hit balls from going into the water or severe terrain. Frequently, the slope of the bunkers and/or ground between the greens/fairways and water/severe terrain is such that the bunkers could not be made accessible to persons with disabilities.

Putting Greens
4. There should be at least one (1) accessible route to all putting greens on the course that comply with xx.x.

EXCEPTION: Would include extreme safety and terrain issues and environmental issues, such as wetlands and protected areas.

Rationale: There should not be any design issues for greens as prescribing design guidelines would adversely affect design freedom and may change the fundamental nature of the game. Many greens exceed 1:20 slope to provide for challenge in putting.

Practice Bunkers
5. Where practice bunkers are provided, at least one of each shall be accessible and comply with xx.x.

Rationale: Not all golf courses have practice areas. Not all practice areas have practice bunkers, or practice greens. See rationale for Hazards, above.

Practice bunkers can be made accessible, because doing so would not destroy the integrity of the golf course or the fundamental nature of the game.

Practice Putting and Chipping Greens
6. Where practice putting and chipping greens are provided, at least one of each shall be accessible and comply with xx.x.

Practice Teeing Grounds
7. Where practice teeing grounds are provided, a minimum of one teeing station, or 5% of those provided, whichever is greater, shall be accessible and comply with xx.x.

Weather Shelters
8. Where weather shelters are provided which serve the golf players, they shall have a clear space at least 5′ by 8′ to allow at least one golf car to be pulled underneath. This 5′ by 8′ space is in addition to the normal space provided for sheltering.

Rationale: No specific design considerations are required.

Signage
9. When provided, teeing ground signage shall conform to ADAAG sections 4.30.1, 4.30.2, 4.30.3 and 4.30.5.

EXCEPTION: Sprinkler head signage used for yardage anywhere on the course and yardage markers at ground level on the tees and course are not required to comply with 4.30.

Rationale: See technical provisions for other exceptions.

Amenities
10. Common use toilet rooms, snack bars and other similar amenities, if provided primarily for the

benefit of players of golf, shall be accessible only from golf car paths, where paths are provided.

APPENDIX: Emergency warning systems are not design issues. Most courses do not provide warning systems. If a system is provided, some alternate system shall be provided (i.e., hand held instruments) in case the primary system malfunctions, or the primary system cannot be seen or heard.

Rationale: Since there are many different types of warning systems, they are considered a program issue. These systems are not usually designed or installed during construction of the golf course. When they are, the golf course architect does not design the system. Warning systems are not usually provided by golf facilities. When they are, the systems can be sirens, horns, etc., mounted on the clubhouse or golf shop. Also, there are portable systems not requiring design issues.

There are liability issues involved in both providing and not providing, warning systems. Again, this is a program issue and should not be addressed in these guidelines.

Through the Green

11. Through the green includes fairways and roughs. When there are golf car paths, there shall be a defined, level access point to the fairway, where terrain permits. These points would begin near the beginning point of the fairway. Where continuous access once on the fairway (through the green) is not possible because of natural barriers, access shall be provided at maximum distances of every 75 yards from golf car paths (where paths are provided). Exceptions to this would include: extreme safety and terrain issues; environmental issues, such as wetlands and protected areas. No design or access issues apply to "roughs."

TECHNICAL PROVISIONS

Teeing Ground. The entry point to each teeing ground from the golf car path, or recognized golf car parking area, shall not exceed a slope of 1:20, i.e., a one foot rise in a 20 foot run. (See exception under scoping provisions). The accessible teeing ground shall be wide enough to allow ingress/egress from a forward moving golf car with no cross slopes greater than 1:50 (one foot rise in 50 foot of run).

Rationale: Any slope that is considered the "accessible route" to the teeing ground that is greater than 1:20 is considered a ramp. Ramps are not recommended for this purpose. "Accessible Route" is defined in ADAAG 4.3.

The accessible teeing ground shall not be designated differently from all other tees, e.g., by using the international symbol of accessibility, and shall be constructed with the same or similar surface material, i.e., grass as on all other teeing areas.

On golf courses where golf car paths are not utilized the above car parking area shall instead be an area with a minimum 10′ x 10′ dimension that provides an access route to the teeing ground.

Control mechanisms for ball washers, trash receptacles, water coolers and their location, if provided, shall follow ADAAG guidelines for controls and operating mechanisms (ADAAG 4.27).

Rationale: It is not desired to segregate disabled players from other players. Use of the international symbol of accessibility would tend to segregate rather than integrate golfers with disabilities from the general golfing population. They should not be used on the golf course.

Teeing ground signage (if provided) shall follow the ADAAG 4.30.2, 3, 5 guidelines for information signs, except for sprinkler-head signage anywhere on the course used for yardage and yardage markers at ground level on the tees and course.

The accessible tee(s) on each hole shall be indicated on the scorecard.

Rationale: Making sprinkler head signage and lasered yardage markers on tees comply with ADAAG 4.30 would alter the effective use of the sprinklers and markers.

Bunkers. There are no recommended special design provisions for bunkers.

Rationale: Sand is not an acceptable surface under ADAAG. Because of the composition of sand and other materials used in bunkers, most bunkers could not be exited by a wheelchair or golf car. The design of "bunkers" require "lips" to retain the sand. Where architects desire to design accessible bunkers, such bunkers should have a minimum of one ingress/egress point. Bunkers are designed to make golf courses challenging and many bunkers are designed to keep golf balls from going into hazards. Therefore, it is not desired to destroy the integrity of their design, nor the fundamental nature of the game.

Practice Area. Practice areas (where provided) shall have a route from the golf car path (if paths exist), or recognized car parking area to the practice area (if parking area exists) with a slope of 1:20 or less and a cross slope of 1:50.

Each teeing practice area (if provided) shall have a minimum of one accessible teeing station per 25 teeing stations, or 5% of all stations, whichever is greater. The dimensions for this station shall be a minimum of 10′ x 10′ (wide enough to accommodate a player playing out of the side of a golf car).

Rationale: Practice areas may be used by many more persons with disabilities than the golf courses themselves (by their choice).

A practice sand bunker (if provided) shall be accessible. Accessibility shall be provided as follows: An ingress/egress route with a minimum of 52" in width. Bunker lip at ingress/egress point of no more than 2" measured to normally compacted sand within the bunker. An approach shall be provided to the accessible bunker edge with a maximum cross slope of 1:50 (2%) and a running slope no greater than 1:20 (5%). An area within the bunker of at least 5′ x 5′ shall be provided. Sand textures shall be typical and representative of sand in the sand bunkers on the golf course. It would be desirable to have more room within the bunker for disabled golfers. Additionally, an accessible bunker that provides a variety of shot-making opportunities such as steep or high faces; flat bottoms; sloped bottoms; shots requiring explosions and shots out of a flat bunker face is desirable.

Rationale: These provisions apply for a practice sand bunker only if one is designed and constructed in the practice area of a golf facility. This is, of course, highly variable from site to site and it must be emphasized that not all courses have an opportunity to possess a practice bunker. Practice bunkers can be made accessible without changing the fundamental nature of the game, as played on a golf course.

Golf ball dispensing machines, shoe cleaning apparatuses, ball washers and other amenities shall meet current ADAAG requirements for vending machines (ADAAG 5.8).

Through the Green. There shall <u>not</u> be grade or cross slope regulations governing the fairways, or roughs.

Rationale: Prescribing regulations or guidelines would fundamentally alter the nature of the game of golf.

The design guidelines are recommended for on-course amenities, except that accessible fairway entry ways may be designated as such in cases where golf cars may normally not be permitted access.

Rationale: Entry ways shall <u>not</u> be marked with the international symbol of access as there are alternatives to do this that would not bring public attention to individuals with disabilities.

Hazards. No technical provisions are prescribed.

Rationale: Bunkers (which are defined as hazards, are covered above).

Putting Green. The accessible entry/exit point to each green recommended under scoping provisions of this document shall be provided with a slope of 1:20, or less. (See scoping provisions for recommended exceptions.)

There are no recommended design guidelines for the putting green itself.

Rationale: Prescribing access for greens would adversely affect design freedom and may fundamentally alter the nature of the game of golf. Putting is a large part of the game of golf and the

skill of putting over slopes greater than 1:20 is an integral part of the game.

Weather Shelters. When shelters are provided, the size of the shelter shall have a clear space of 5′ x 8′ to allow a golf car to be pulled underneath.

Rationale: A person with a disability restricted to a golf car, must be able to drive the car underneath the shelter.

Golf Car Paths. No technical provisions are recommended. Where golf car paths are provided, curb cuts will be provided every 75 yards where feasible.

Rationale: Some golf courses do not have golf car paths. The ones that do use various materials in their construction: pebbles, crushed rock, asphalt, concrete, and wood chips. All of these materials accommodate golf cars.

ALTERATIONS TO EXISTING GOLF COURSES

DEFINITIONS

(New Construction definitions apply)

SCOPING PROVISIONS
(4.1.1 - 4.1.7)

(New Construction Scoping Provisions apply)

TECHNICAL PROVISIONS
(4.2 - 4.35 - Sections 5 - 10)

(New Construction Technical Provisions apply)

RECOMMENDED ADDITIONS TO ADAAG: ALTERATIONS

DEFINITIONS:

(New Construction definitions apply)

SCOPING PROVISIONS

Teeing Ground. If an existing teeing ground is altered on one or more holes at a golf course, a teeing ground on that hole shall be made accessible from the golf car path (where paths are provided) or from golf car parking areas (where provided).

Rationale: This would require one teeing ground only on each hole at a golf course that is altered, to be made accessible. The teeing ground altered would not necessarily have to be the one made accessible.

On golf courses where golf car paths are not utilized the above golf car parking area shall instead be an area with a minimum 10′ x 10′ dimension that provides an access route to the teeing ground.

Rationale: To provide sufficient space for a disabled person to park his golf car, get out of the car into the wheelchair and proceed to the teeing ground.

Alteration means changing the physical dimensions (length, width or elevation) of the teeing ground. Resodding, reseeding, changing the type of grass, or adding sprinklers, are not considered alterations.

Rationale: Preparing the surface of a tee for resodding or reseeding requires the same minor preparation of the tee surface.

Altering the teeing ground on one, or more, hole(s) does not require the alteration of the teeing ground on all other holes on the course.

Rationale: Frequently it is necessary to alter only one teeing ground on a course while there is no necessity to alter teeing grounds on other holes of the course. For instance, one teeing ground may need to be relocated in order to lengthen, or shorten, the hole. Or, one teeing ground can sustain damage to the extent it would require alteration, i.e., a flood. In these cases, required alterations to the one teeing ground should not require alteration to other teeing grounds on the course.

Practice Area. Each existing practice area, whether at a golf facility, or a stand-alone practice area, if altered as follows, shall be made accessible. Alterations would be where the physical size of the practice area is changed, or the number of hitting stalls are increased or decreased. Changing from hard surface (i.e., concrete, asphalt) to grass or vice versa is considered an alteration. Resodding,

reseeding, top-dressing existing grass, adding or eliminating lighting or water sprinklers are not considered alterations.

Rationale: Normal maintenance and hitting surface enhancement, is not considered altering the practice area.

If practice bunkers, or greens, are provided at practice areas, they would not have to be altered just because the practice areas on which they are located, are altered. However, if those practice bunkers, or greens, are altered, at least one of each shall be made accessible.

Rationale: The owner may be financially able to alter his practice area to make it accessible, but may not be financially able to alter existing practice bunkers, or greens.

Hazards. No access issues apply to water hazards, so altering a water hazard does not require provisions of access. Bunkers are covered above.

Rationale: "Hazards" are bunkers and water hazards.

Putting Green. On a golf course, if a putting green is completely rebuilt, which includes changing the contouring or changing the elevations of the green, then the scoping provision for new construction apply. Changing the type of grass by resodding, or reseeding, or increasing or decreasing the mowing pattern of the green does not constitute an alteration. Changing or replacing the irrigation system does not constitute an alteration.

Rationale: There should not be any alteration design issues for rebuilding greens, as prescribing design guidelines would adversely affect the design freedom and may change the fundamental nature of the game. A slope of more than 1:20 is normal on greens to tax a player's putting skill.

Altering one, or more, putting green(s) on a course does not require the alteration of all other greens on all other holes on the course.

Rationale: Frequently it is necessary to alter one or more putting greens on a course, but no need to alter the remaining greens. For instance, one putting green may need to be relocated for some reason, i.e., damage due to act-of-God. The necessity to alter this one putting green should not require alteration to any other putting green on the course.

Weather Shelters. If existing weather shelters are replaced, or altered, the scoping provisions for new construction apply. Repair does not constitute an alteration.

Rationale: Self explanatory.

Golf Car Paths. Not all golf courses have golf car paths. Repair of existing paths, does not constitute alterations. New installation, rerouting, or complete resurfacing of existing paths does constitute an alteration.

Rationale: No specific considerations are required.

TECHNICAL PROVISIONS

(New Construction Technical Provisions apply, if within provisions of alteration ADAAG Scoping Provisions)

NEW CONSTRUCTION: MINIATURE GOLF

RECOMMENDED ADDITIONS TO ADAAG

DEFINITIONS:

Playing Area. The entire area that has been designated by the owner/manager on which players engage in the recreation of miniature golf.

Rationale: No existing definition.

Playing Surface. An area which is a part of the playing area that has been designated by the owner/manager on which players move a golf ball from a starting point to an ending point.

Rationale: No existing definition.

Scoring Table. An elevated platform on which score cards may be placed for the purpose of recording a score. Found on most miniature golf playing areas.

Rationale: No existing definition.

Obstacle/Prop. Any device, mechanism, physical structure or physical characteristic on or of the playing surface provided by the owner/manager for the purpose of adding difficulty to the game for amusement or competitive purposes.

Rationale: No existing definition.

Railings. Elevated boundary markers distinguishing playing surface from playing area. The primary purpose of railings is to confine balls on the playing surface.

Rationale: No existing definition.

SCOPING PROVISIONS

Playing Area. Require the entire playing area to be accessible to disabled participants. The playing area shall include an accessible route.

Rationale: Prevailing miniature golf design practices present barriers throughout an area.

Playing Surface. The entire playing surface shall be accessible. In areas on the playing surface where the ball cannot come to rest because of the degree of slope, access is not required. In such areas, access shall be provided at starting points, at the end, and to points in between where the ball may rest. Note: The Miniature Golf Association does not agree with the position of the subcommittee. The association prefers the following language: "The playing surface shall be fully accessible at starting points, and end points where possible, and at all points in between, where necessary. In areas within the playing surface where the ball cannot physically come to rest because of steep slopes, accessibility should not be required."

Rationale: To allow continuous play through each playing surface, or "hole."

The entry and exit points of playing surfaces shall be accessible with regard to width, absence of railings and obstacles, elevation change and the like.

Each hole will have a turn-around area a minimum of 60" wide in proximity to the hole to allow for a wheelchair to have sufficient space in which to turn around and otherwise maneuver.

Entry and exit points shall be a minimum of 32" wide, in accordance with ADAAG 4.3.3.

Rationale: A person using a wheelchair must be able to adequately negotiate the playing surface and be provided sufficient room in which to maneuver and play the game.

Scorecard Stands. Shall be placed at a height negotiable by all players of varying disabilities.

Rationale: Current provisions appear to allow for varying heights of stands. This provision would make the scoring stand provision consistent.

Obstacles/Props. Obstacles offered to enhance difficulty or competition shall be of a certain size and placement so as not to impede or restrict play of a disabled participant. A minimum of 32" clear width to either side of an obstacle is required to allow golfers to pass by the obstacle while playing the hole.

Rationale: Current miniature golf courses often include obstacles that completely prevent all possible progress of disabled golfers.

Railings. Railings shall be built in a way so as to allow accessibility to the playing surface. At a minimum, accessibility shall be provided at the starting and end points of each playing surface or "hole."

Rationale: Railings provided at most miniature golf courses to contain the golf ball also act to impede certain traffic of disabled golfers.

Additionally, accessible points shall be provided at midway points of playing surfaces.

Rationale: To allow disabled golfers access to their ball if it does not travel the entire distance of the playing surface or if the ball bounces back to a midway point.

TECHNICAL PROVISIONS

Playing Area. All amenities, (i.e. scoring tables, benches) of the playing area shall be made accessible from the playing area entry point by an accessible route. The accessible route shall comply with ADAAG 4.3.

Rationale: Many current miniature golf courses do not offer an accessible route, thereby denying many potential disabled participants the opportunity to engage in the recreation.

Playing Surface. In areas within the playing surface, where the ball cannot physically come to rest because of steep slopes, accessibility should not be required.

Rationale: If slopes of playing surfaces are so steep that a ball will not come to rest, those slopes would not have to be accessible.

Scorecard Stands. Scorecard stands shall be placed at a height not to exceed 30" for side reach and forward reach.

Rationale: This would allow all participants to use the scorecard stand.

The allowable height is consistent with ADAAG provisions regarding side and forward reach height dimensions.

Obstacle/Prop. All obstacles/props, i.e. concrete blocks, gates, passages, caves, etc., offered as part of the playing surface for the purposes of increasing difficulty in order to enhance amusement or competition, shall be placed in a manner so as to allow full navigability by all participants.

Rationale: This is not currently a typical miniature golf provision.

Obstacles/props placed across the full width of the playing surface shall offer entrance/exit points on either side and front and back of the obstacle. Such points shall be a minimum width of 32". ADAAG 4.2.4.

Rationale: Without this provision, many disabled participants would not be afforded the opportunity to engage in the recreational activity of miniature golf.

Railings. Railings that serve to contain golf balls shall not exceed a height of 1" at entrance and exit points for wheelchairs to the playing surface and either side and front and back of obstacles placed on the playing surface.

Additionally, these points of ingress/egress shall be a minimum of 32" wide.

Rationale: Otherwise, many disabled golfers, particularly those who use wheelchairs, would not be allowed to participate.

BOATING AND FISHING FACILITIES SUBCOMMITTEE

INTRODUCTION
NEW ADAAG SECTION
PROPOSED ADAAG STANDARDS FOR BOATING AND FISHING FACILITIES
DEFINITIONS
BOATING FACILITIES: SCOPING AND TECHNICAL PROVISIONS
FISHING FACILITIES: SCOPING AND TECHNICAL PROVISIONS

☛ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

INTRODUCTION

Three members of the Recreation Access Advisory Committee were appointed to the Boating and Fishing Facilities subcommittee: Katherine McGuinness, Katherine McGuinness & Associates; Judith Wheeler, State Organization for Boating Access (SOBA); and Francine Wai, Hawaii Commission on Persons with Disabilities. In addition, Mark Giblin, representing the Disabled American Veterans, joined the subcommittee after January 1994.

The subcommittee was instructed to develop minimum accessible design standard recommendations for design elements of upland and in-water structural improvements at recreational facilities. Vessel access and vessel design modifications will be addressed in supplemental guidelines to be developed by the Access Board and the Department of Transportation (U.S. Coast Guard).

Process

To accomplish its assigned task, open public subcommittee meetings were held in conjunction with Recreation Access Advisory Committee meetings with conference calls conducted between meetings. A mailing list comprised of interested citizens and organizations was developed and minutes of all meetings and working papers were disseminated to augment the efforts of the Access Board staff to insure public review.

The subcommittee conducted a nationwide search of available publications relating to accessible design of recreational boating and fishing facilities. A comparison of facility design elements was compiled from the research project. This comparison formed the basis of the subcommittee's first draft working paper. This working paper was reviewed and modified by subcommittee members, with additional review by members of the public and the States Organization for Boating Access.

Environment Overview

The marine environment is dynamic and poses accessible design challenges different from those encountered in a static, land-based environment. Bodies of water experience changing water levels due to tides, reservoir drawn downs, flooding, dam releases, snow melt, rain, and drought.

Site improvements for recreational boating and fishing vary tremendously, and are as diverse as the bodies of water on which they are located. They can consist of nothing more than a packed dirt parking area to get traffic off roadways in a rustic setting, or a multi-use complex marina development in an urban setting. The design standards that help implement the ADA must reflect both the legislative mandate not to discriminate based on disability, as well as the tremendously varied conditions found in recreational boating and fishing. These include user expectations, development resources, site conditions, scale of operations, complex regulatory environment, and recreation season.

Like many outdoor recreation facilities, boating and fishing facilities present challenges to designers, owners, operators, and users in defining what is "accessible." Traditional, landside design standards for accessibility cannot simply be applied to all

boating and fishing facilities without altering the fundamental nature of the recreational experience, or without so limiting development and operations as to be counter to other of the ADA's intentions. It is for this reason that the subcommittee supports the Recreational Opportunity Spectrum (ROS) concept and encourages its adoption to offer our citizens a variety of recreational experiences.

The subcommittee focused its attention on site improvements that facilitate recreational boating and fishing activities landside, at the land/water interface, and over water. It was accepted as a given that many of these facilities would require new ADAAG standards. The most deliberated issue dealt with by this subcommittee was an acceptable minimum design recommendation for an accessible gangway structure, a design element found in many recreational boating and fishing facilities. Because consensus could not be reached, the subcommittee offers three options and encourages public input and additional research.

The following guiding principles, definitions, scoping and technical provisions represent this subcommittee's effort to propose reasonable accessible design standards supporting the ADA and DOJ's implementing regulations.

Guiding Principles

The minimum guidelines proposed by the subcommittee are based on the principle that individuals with disabilities shall have equal access to all recreational boating and fishing facilities where facility improvements are made.

Although full access must ultimately include the ability to board and disembark from a vessel, the guidelines in this report encompass only those accessibility features of buildings and facilities on land up to, but not including, the actual vessel boarding. The subcommittee was instructed to develop minimum standard recommendations for design elements of upland and in-water recreational facility structural improvements to address accessibility. Access onto and within vessels, including vessel design modifications, will be addressed in supplemental guidelines to be developed by the Access Board and the Department of Transportation. It is not the intent of this subcommittee to minimize the importance of this issue, but rather outline up front that the matter was beyond the purview of our charge.

The Recreational Opportunity Spectrum concept is supported by this subcommittee. ROS is particularly relevant to recreational boating and fishing facility improvements and pedestrian routes with varying degrees of challenge between parking areas and the waterfront.

The marine environment is dynamic and poses accessible design challenges different from those encountered in a static, land-based environment. Bodies of water experience changing water levels due to tides, reservoir drawdowns, flooding, dam releases, snow melt, rain, etc.

The guidelines proposed are minimum guidelines. They are realistic, feasible, and permit ready compliance with existing materials and manufactured structures while allowing adequate flexibility for incorporating new technological advances in the area of accessible design.

The proposed minimum design guidelines can be measured. The determination of compliance with the design guidelines for any floating structures (docks, gangways, marine ramps, etc.) will be measured under the hypothetical condition called "nominal marine conditions", a hypothetical condition in the marine environment where physical facilities are stable and unmoved by the effects of wind, waves, wakes, currents, and weather conditions.

Modifications in ramp slope/length ratios are being proposed based on limited current information. The Access Board's current research should include a review of these issues as well as surface treatment for wet/dry conditions.

NEW ADAAG SECTION

The subcommittee recommends a new ADAAG section for recreational boating and fishing facilities. Common facilities (toilets, restaurants, retail, etc.) can be referenced to existing standards; but facilities unique to recreational boating and fishing require a new ADAAG section. In some cases, existing

scoping or technical standards require modification for application to boating and fishing facilities (ground surfaces, parking, ramps). These may be repeated/amended in the new boating and fishing section, or amended with exceptions in the current locations.

The following notes for ADAAG standards for recreational boating and fishing are presented in the following outline:

Definitions
Recreational Boating: Scoping and Technical
Recreational Fishing: Scoping and Technical

PROPOSED ADAAG STANDARDS FOR BOATING AND FISHING FACILITIES

DEFINITIONS

Boating and Fishing Facilities. Recreational boating or fishing facilities are site improvements completed on landside, at the land/water interface, or over water. Recreational boating facilities include, but are not limited to, carry down sites, launching ramps, docks, piers, marinas, etc. Recreational fishing facilities include, but are not limited to, on- or off-shore fishing piers, fishing stations, and fish cleaning stations.

Rationale: The subcommittee recommends that most design standards for recreational boating/fishing facilities be placed in a new section of ADAAG. Therefore, it is necessary to define the facilities (type and scope of development components) to which the provisions apply. This is particularly important as it reflects development elements unique to boating or fishing activities.

Boat Launching Ramp. A ramp which is intended for the primary purpose of facilitating the launching and retrieval of trailered boats to and from the water.

Rationale: Although there are no specifications called forth for a boat launching ramp, a provision is recommended under the section on accessible route (see ADAAG 4.1.2), to clarify that a launching ramp is not considered part of the accessible route.

Marine Ramp. A fixed ramp or walkway which is situated on a floating structure. A marine ramp shall be part of an accessible route.

Gangway. A moving structure which spans between land or a fixed structure and a floating structure located in a marina facility.

Rationale: Although a gangway functions like a ramp in that it provides a walkway connecting two areas or structures, the uniqueness of water elevation fluctuations and the resulting slope changes that occur for a floating structure to which a gangway is connected will result in technical specifications for a gangway different from that in ADAAG. Therefore, a new definition is necessary. A gangway is unique to the marine environment.

Transition Plate. That element connected to the end(s) of a gangway, boarding dock, or marine ramp which provides access from the end of the gangway or marine ramp to a level platform (usually a dock, pier, boarding dock or shore).

Carry Down Sites. Improvements (typically only parking) provided for small boats and canoes usually transported on top of or in a vehicle.

Marina. A facility with site improvements that may include, but are not limited to, parking, accessible route(s), toilet(s), shower(s), gangway(s), dock(s), pier(s), launching ramp(s), pump-out stations, fish cleaning stations, fuel pumps, retail, restaurants, floating or fixed structures for the mooring of vessels with gangway structures to facilitate access from land.

Rationale: Marinas vary tremendously in size and complexity. They may be simple with only a parking lot and pier with boat tie-up; or complex with many acres of land, docks, parking, piers, boat slips, moorings, and support facilities such as restaurants, retail stores, clubhouses, maintenance shops, storage, etc. Minimum design requirements for accessibility are outlined in the technical portion of this paper by structure function.

Boat Slips. The area where a boat is tied to a dock or pier, and where embarking or disembarking from a vessel occurs.

Rationale: Boats are usually docked in slips or mooring spaces for broadside moorage along a pier. Boat slips usually provide electrical service and potable water accessed by controls and other operating mechanisms.

Boat Tie-Down Area. The space at boat launching sites used for staging, make-ready, or wash down of watercraft before and after use.

Boarding Dock, aka Courtesy Dock or Skid Pier. A structure located at a boat launching ramp to facilitate access to and from a boat.

Vehicle/Trailer Parking Space. A parking space intended for use by a car or small truck pulling a recreational boat trailer.

Rationale: Vehicles used to pull boats on trailers are often large cars, vans, or small trucks. The technical provisions will require a parking space that is both wider and longer. These spaces may require backing out of.

RV Trailer Parking Space. A parking space intended for use by a recreational vehicle pulling a recreational boat trailer.

Rationale: Because RVs are often used in recreational boating or fishing these spaces need to be even larger. These spaces may require backing out of.

Vehicle/Trailer Pull-Through Parking Space. A vehicle/trailer parking space which does not require backing into or out of.

Rationale: Many recreational boating and fishing facilities provide parking spaces that allow boat trailers to remain attached to their vehicles, and which do not require backing up to maneuver out of the parking space.

Fishing Pier. An on- or off-shore site improvement or any portions thereof intended for fishing, including, but is not limited to, bulkheads (a solid structure separating land and water) and breakwater fishing platforms (a facility on a breakwater designed to provide anglers with access to the water for fishing), parallel piers, and fishing stations.

Fishing Station. Any fishing structure where optional railings have been installed.

Fish Cleaning Station. A counter, water supply, and a means of disposing of waste. It may be located in an open air area, with a pavilion covering, or incorporated into a building structure.

Safety Rail. A structure or guard rail provided to ensure the safety of a user near edges where there is a dangerous condition.

Rationale: Safety railing or guard rails are distinguished from handrails in that they are intended to protect pedestrians from falling off the edge of a boardwalk, breakwater, bulkhead, etc. They are not intended as handrails, although handrails may be included. Under the auspices of other building codes, the term "guardrail" has been used to define a structure provided to ensure the safety of the user near drop-off situations of 30" or greater. The use of the term "guard rail" to indicate the need for a railing for pedestrian safety purposes may be confused with the function associated with highway guardrails. The subcommittee therefore recommends that for recreational facilities, where safety of a site user is at risk, the term "safety railing" be adopted.

Nominal Marine Conditions. A hypothetical condition in the marine environment where physical facilities are stable and unmoved by the effects of wind, wakes, currents, and weather conditions.

RECREATIONAL BOATING FACILITIES: SCOPING AND TECHNICAL PROVISIONS

NOTE: Section numbers such as 4.1.2 refer to current ADAAG provisions.

Accessible Route 4.1.2 (1)-(3)

Modify... but see Rationale.

Rationale: This subcommittee defers to the Outdoor subcommittee. We agree in principle to follow ROS suggestions regarding differing requirements for different types of facilities, based on degree of improvements made, ROS classification, and user expectations.

Amend 4.1.2 (1)-(3) as follows:

The accessible route to boat launching areas ends at the crown of the boat launching ramp. A boat launching ramp and bridges to boarding docks if provided, shall not be considered part of the accessible route.

Rationale: Because boat launching ramps are, by necessity, steeper than pedestrian ramps, the accessible route cannot include a boat launching ramp. (See signage section). Bridges that lead to boarding docks (optional amenity) typically lie on the launching ramp, called ground out. They float up and down with the boarding dock structure as water level changes occur. To facilitate working with lines to boats, e.g., guiding on and off trailers, bridges are flat, deck surfaces only, void of hand/safety rails. Thus, they differ from gangway structures.

Ground and Floor Surfaces

4.5.1 General (Technical Provision)

Amend 4.5.1 as follows:

4.5.1 General. Ground and floor surfaces along accessible routes and in accessible rooms and spaces including floors, walks, ramps, stairs, marine facilities, and curb ramps shall be stable, firm, and slip resistant in wet and dry conditions, and shall comply with ADAAG 4.5.

Rationale: Ground and floor surfaces for accessible routes in marine facilities apply to the land-based path of travel, connecting gangways, marine ramps, and off-shore facilities. It is necessary to specify that the requirements for stability, firmness, and slip resistancy shall apply in wet and dry conditions to emphasize the fact that different parameters will apply to marine facilities. The subcommittee discussed the option of including an exception to the requirement for stability to take into account the uniqueness of the marine environment. Limited information was available from the State of California Department of Boatways utilizing a criteria of 20 lbs. per sq. ft. uniform live load/15 lbs. per sq. ft. lateral wind load/450 lbs. vertical live point load as a minimum for floating structures. However, the subcommittee did not believe that this was sufficient to make a recommendation for marine floating facilities. The subcommittee recommends a study to better define the term "stable" for a floating structure in a nominal marine condition, i.e., specific live load weight requirements and to determine how to best measure stability for a floating structure.

Parking 4.1.2 (5)(a) and (b) (Scoping)

Amend 4.1.2 (5)(a) as follows:

If a parking area provides vehicle/trailer parking spaces, vehicle/trailer pull-through parking spaces, or recreational vehicle/trailer parking spaces at recreational boating facilities, then ADAAG 4.1.2(5)(a) and 4.1.2(5)(b) (including one van space) applies to the total number of parking spaces. If the parking area contains 25 or less parking spaces, the designated accessible parking space shall be one of the largest size spaces offered. If the parking area contains 26 or more parking spaces, the number of accessible parking spaces shall be proportionately applied to the various sizes and/or categories of spaces offered.

Rationale: Parking areas at recreational boating facilities typically provide various sized spaces to accommodate parking for vehicles, and vehicles with boat trailers which may be angled or pull-through in nature. To avoid confusion as to the appropriate number of spaces to be designated accessible, the subcommittee recommends that ADAAG be amended to recognize that a parking lot may contain various sized spaces, but that the total number of spaces is to be used in determining the number of accessible designated spaces required.

Parking and Passenger Loading Zones 4.6 (Technical Provision)

Amend 4.6.3 as follows:

4.6.3 Parking Spaces. Accessible parking spaces shall be at least 96 in. wide. Accessible parking for vehicle/trailer parking spaces shall be at least 108 in. wide. Accessible parking for recreational vehicle/trailer parking spaces shall be at least 120 in. wide. Parking access aisles shall be part of an accessible route to the building or facility entrance and shall comply with ADAAG 4.3.

Rationale: The present ADAAG 4.6.3 requires that accessible parking spaces shall be at least 96 in. wide. While this minimum width accommodates a compact vehicle well, it does not adequately serve a full-sized vehicle which is commonly required to pull a boat trailer.

Amend 4.6.2 as follows:

4.6.2 Location. Accessible parking spaces serving a particular building or facility/site improvement shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance or facility/site improvement.

Rationale: A recreational boating and fishing facility may cover a broad land area. Designated accessible parking spaces should not be on opposite ends of a parking lot from amenities. (Note: This may also apply to other outdoor developed areas such as parks, etc.)

Signage (Parking and Passenger Loading Zones) 4.6.4 (Technical Provision)

Amend 4.6.4 as follows:

4.6.4 Signage. Accessible parking spaces shall be designated as reserved by a sign showing the symbol of accessibility (see ADAAG 4.30.7). Spaces complying with ADAAG 4.1.2(5)(b) shall have an additional sign "Van-Accessible" mounted below the symbol of accessibility. Accessible vehicle/trailer pull-through spaces designed for two-way traffic shall have signs printed on both sides to be visible to drivers entering from either side of the space, and shall be located midway between the ends of the access aisle off to the side, leaving a clear space of 36 in. so as not to obstruct the accessible route. Such signs shall be located so they cannot be obscured by a vehicle parked in the space.

Signage at Recreational Boating or Fishing Facilities (Scoping)

At boat launching ramps where the slope exceeds a typical design standard of 12-15%, there shall be a sign posted at the crown of the ramp identifying the launching ramp as "Steep Slope". At gangways that do not provide access during all operating hours, there shall be a sign posted identifying the maximum and minimum slopes possible. When a route within a boating or fishing facility is not fully accessible (e.g., between a parking lot and shore used for bank fishing or boat carry-down site), signage shall be posted at the site's pedestrian entrance(s) and/or at the parking area(s) with information on the route's distance to the boating or fishing area, average and maximum slope, average and maximum cross slope, and minimum width. Signage shall comply with ADAAG sections 4.30.1, 4.30.2, 4.30.3, and 4.30.5.

Rationale: It is not practical to make a launching ramp accessible by reducing its slope, as to do so would make launching and retrieving a boat difficult, if not impossible. A boat launching ramp is not intended to be part of an accessible route. Boaters with disabilities will find coping with steeper slopes on launching ramps less troublesome than having to launch or retrieve a boat with a lesser grade. It is important, however, to designate when ramps are steeper than 15% so as to warn people with disabilities not to use them for an accessible route into the water.

Technical provisions of signage for routes that are not fully accessible should conform with the Outdoor subcommittee's recommendations. Those given here are for general consideration.

Building Signage 4.1.2 (7) (Scoping)

Amend 4.1.2 (7) as follows:

(7) [Building] Signage. Signs which... Elements and spaces of accessible facilities which shall be identified by the International Symbol of Accessibility and which shall comply with ADAAG 4.30.7 are:

(a)...
(b)...
(c)...
(d)...

(e) Accessible gangways
(f) Accessible boat slips

Rationale: Amend this section to simply read "Signage", not "Building Signage", as it is not limited to buildings.

The complex design of recreational boat facilities, particularly marinas, makes mobility a particularly difficult task for people with disabilities. It is important that there be designated signage to inform the person who has a disability. The importance of description and direction is critical since not all portions of a marina are required to be accessible. Given the fluctuating tides and instability of many of the routes, taking an inaccessible route can be problematic for a person with a disability. The current requirement under ADAAG 4.1.2(7) for signage at accessible entrances when not all are accessible does not appropriately "fit" since many marinas do not have a formal entrance, per se, to gangways and boat slips.

Boat Slips (Scoping)

Add a new section as follows:

When boating slips are provided at recreational boating facilities, accessible boat slips shall be provided in conformance with the table below...

[Note: Table numbers are the same as in ADAAG 4.1.2(5)(a), substituting "boat slips" for "parking spaces."]

Accessible boat slips shall be dispersed among the various classes of boat slips available to patrons of the marina. However, accessible boat slips may be clustered if equal or greater access is provided, provided that they are clustered using the largest size slip provided.

Rationale: Accessible boat slips may be clustered in alterations because of the difficulty in retrofitting. However, although clustering is permitted, accessible slips should still be dispersed among the various classes of boat slips in the same manner as accessible transient lodging must be dispersed among the various classes of sleeping accommodations. Boating slips are usually provided for both seasonal and transient renters if both types of arrangements normally are offered. Accessible slips may be provided at finger piers or broadside against the main pier. Since most facilities provide boat slips of various sizes to accommodate craft of various lengths, accessible boat slips likewise should accommodate the varying lengths of craft used by people with disabilities. By designating slips for large boats at one main pier as accessible, the expense of constructing and maintaining connecting ramps at floating docks at several main piers can be avoided. Such slips can accommodate not only the large boats for which they are built, but also smaller boats for persons with disabilities, if necessary.

The subcommittee proposes that the formula for a percentage of required boat slips be derived from the percentage for accessible parking spaces.

Boat Slips (Technical Provision)

Add a new section as follows:

An accessible boat slip shall be on an accessible route. Accessible main piers leading to an accessible boat slip shall be a minimum of 60 in. wide. Accessible finger piers leading to an accessible boat slip shall be a minimum of 60 in. wide. Electric, telephone, water and TV outlets serving accessible boat slips shall be mounted within the reach range for forward or side reach (ADAAG 4.2.5 or 4.2.6). ADAAG provisions for controls (ADAAG 4.27.4), ground and floor surfaces (ADAAG 4.5), slope (ADAAG 4.3.7), and protruding objects (ADAAG 4.4.1) shall apply.

One of the largest designated accessible boat slips or an equivalent accessible area on a main pier or bulkhead providing broadside moorage shall remain open at all times and shall be designated for loading and unloading of persons with disabilities onto/from a craft. An accessible boat slip should provide mooring posts or stanchions in addition to cleats

Rationale: Marinas consist of a sheltered basin in which watercraft can be moored. Boats are usually docked in slips or mooring spaces for broadside mooring along a pier or bulkhead, but there also may be anchor buoys for mooring craft. A main pier extends more or less at a right angle out from the shoreline, to which auxiliary (finger) piers are attached. Finger piers extend at right angles from the main pier and are used by a boater in boarding or disembarking from a vessel. The area in which a boat is moored is called a boat slip. Boat slips are usually offered in a variety of lengths to accommodate various sized craft. Broadside

moorage can also be accommodated at bulkheads or main piers where no finger piers have been provided. It should be noted that not all main piers and finger piers must be designed accessible, but only those which are leading to the required number of accessible boat slips. By following the table, at least one boat slip must be accessible if boat slips are offered. This would infer that a minimum of one accessible main pier shall be provided, even if no finger piers are provided. An accessible boat slip would require an accessible main pier and finger pier. The minimum width of those piers are consistent with an accessible route with a turnaround space.

Accessible transient boat slips shall be offered on a first-come, first-served basis until a specified hour late in the day when normal boat traffic seeking moorage dwindles. After the specified hour, the accessible slip may be rented to the next arriving boater with the understanding the craft will be moved to another slip when an opening is available.

An accessible loading area is essential to permit an open area at all times during normal operating hours to enable craft to maneuver and dock for the purpose of loading or unloading persons with disabilities onto/from a craft, whether the person is a guest on the boat or a visitor to the marina who wishes to board a craft. This is particularly important because the subcommittee stated that it was permissible to rent accessible boat slips to the public after a designated time late in the day recognizing that first-come boats should be served rather than anchor out with a slip remaining vacant. (Note: This may be a Department of Justice issue rather than an Access Board issue.)

The use of cleats may be difficult for persons with limited manual dexterity. Mooring posts or stanchions should be provided in addition to cleats only at accessible boat slips as they are higher (and easier to reach) and require less manual dexterity in making fast or removing mooring lines.

Boat Tie-Down Area (Technical Provision)

Where provided, a boat tie down area shall be a minimum of 16′ x 43′.

Rationale: An area of 16 ft. x 43 ft. is recommended. The current standard area for a tie-down area is 10 ft. x 40 ft. An additional 36 in. around the entire area is needed to provide clearance around a boat trailer to permit a person with a disability to maneuver for tie-down activity or wash-down the boat.

Bodies of water experience fluctuations. Water fluctuations can occur as a result of rainfall, snow melt, drought, reservoir draw down, surge effects, tidal ranges, and flood control variances. The issue of providing accessibility of gangways at existing slope standards not to exceed 8.33% with gangway structures that provide a shore connection with floating structures was the most deliberated issue the subcommittee dealt with in its proposed recommendations.

Two groups have studied the issue of accessible gangways - the States Organization for Boating Access (SOBA) and Project ACTION in Massachusetts. Their results have both been considered by this subcommittee, and are the basis for the two options proposed here. This subcommittee has developed three different technical provisions for gangways based upon the two reports and discussions held throughout the subcommittee's meetings.

Gangways (Technical Provisions)

OPTION #1

There shall be an accessible route to at least one of each type of boating activity in recreational facilities.

When there is only one pier or dock, it shall meet accessible route provisions of ADAAG sections 4.1.2(3)-(4).

Where water level changes do not exceed 5′-0" during the operating season, and gangways are part of the accessible route to boating activities, they shall meet all requirements of accessible routes during all operating hours of a facility. Gangway slope shall not exceed 1:12, and uninterrupted gangway lengths shall not exceed 30′ without level landings as specified in ADAAG 4.8.4.

Rationale: OPTION #1

It is technically feasible to build gangways that do not exceed current ramp length and slope requirements. There is some evidence that ramp lengths that exceed 30' at a slope of 1:12 are difficult for many people with disabilities to use. The Access Board is currently doing research to update this information. Additional information is needed to propose design standards for sites whose water levels exceed 5'-0", especially those with space, operational, or financial constraints. Research on this subject is proposed by the Access Board for FY 1995. Additional design standards should be developed using the results of that research.

Water level changes in tidal waters are defined as the difference in water elevation between mean high water and mean low water. Water level changes in inland waters are defined as the difference between a selected high water level based on hydrological data and other appropriate records used as a safe and practical upper limit for design and construction, and low water level based on hydrological data and other appropriate records which are used as a safe and practical upper limit for design and construction.

Reserved: Where water level changes exceed 5'-0" during the operating season

Rationale: Design standards for recreational boating and fishing facilities at sites where water level changes exceed 10'-0" will be developed, pending additional research and data collection. Until that time, this portion of the ADAAG section should be "reserved". The effect, then, is that recreational boating and fishing sites with water level changes under 10'-0" will be designed to the proposed ADAAG standards; and those sites with water level changes exceeding 10-0" will be designed to be "readily accessible to and useable by people with disabilities", but without a specific ADAAG design standard. In time, even those sites with larger water level changes will have an ADAAG design standard, but it will be based on research and data collection not yet available.

OPTION #2

Gangways shall comply with ADAAG 4.5 (Ground and floor surfaces). Gangway structures shall be a minimum of 36 in. wide, provide safety and handrails (ADAAG 4.26) when the length exceeds 18 in. and provide 2 in. toe curbs. Gangways may be 60 ft. in length before requiring a landing.

Accessible gangways located in water fluctuation areas of 0-5 ft. annual change shall not exceed 8.33% slope. Accessible gangways located in water fluctuation areas of 5 ft. or more annual change shall not exceed 8.33% slope 92% of an operating season (with a 4% exception allowed for the high/low end of a water fluctuation curve for the specific area).

Rationale: OPTION #2

SOBA has conducted extensive research and developed proposals for accessible gangways. At one time SOBA weighed the feasibility of categorizing or grouping facilities by their water fluctuating ranges and then applying a percentage of time that the gangway should be accessible or be required to maintain a slope of 8.33% or less. The water fluctuation formula developed was 0 to 5 ft. - 100% accessible; 5 ft. and over - a reduction of 1% per foot, with a maximum decrease to 50% at 55 ft. water fluctuation range. This endeavor proved unsuccessful because the accessibility level was too low to justify in certain extreme water level fluctuation circumstances.

SOBA reviewed a water fluctuation curve developed for a west coast location and determined that by eliminating 4% accessibility requirements on either end of the curve (high/low), an accessibility level of 92% of an operating season could reasonably be accomplished and make recreational facility developments in these areas of extreme water fluctuations ranges economically feasible. If a 100% accessibility level for the entire operation was mandated, it was felt that this action would eliminate any development considerations at these locations and would adversely impact public recreational opportunities.

The subcommittee recommends providing an accessibility level of 100% for boating facilities

located in water fluctuation levels of 0-5 ft. and 92% for 5 ft. and above.

The subcommittee, through SOBA, requested the Scripps Institution of Oceanography to complete a coastal and tidal assessment (over a 20-year period) of 18 geographic areas so as to be representative of the types of water level fluctuations that exist nationwide.

SOBA recommends providing an accessibility level of 100% for boating facilities located in water fluctuation levels of 0-5 ft. and 92% for 5 ft. and above. The amendment to permit a gangway to be 60 ft. in length before requiring a landing was determined by the subcommittee essential in developing connecting ramps from shore to floating structures where water level fluctuations exist. The additional length will eliminate the provision of multiple switchbacks and thereby reduce user travel time to reach a floating structure. In addition it will substantially reduce prohibitive costs for gangway structures and eliminate potential permitting problems with extensive over-water structures which intrude over submerged lands or into water navigational lanes.

OPTION #3

There shall be an accessible route to at least one of each type of boating activity in recreational boating facilities.

Where there is only one pier or dock, it shall meet accessible route provisions of ADAAG sections 4.1.2(3)-(4). Where gangways are part of the accessible route to boating activities, they shall meet all requirements of accessible routes during all operating hours of a facility.

Rationale: OPTION #3

The Project ACTION study embraced the concept of "levels of access" for different marine facilities. This standard proposes full, unassisted access for people with disabilities to the maximum extent feasible. There will probably have to be exceptions to providing full, unassisted access during all water levels for all facilities. There is inadequate information at this time to determine the basis for those exceptions and what alternative design standards ought to be. Some variables to consider include extreme water level changes, predictability of water level changes, length of operating season, number of users/season, size of vessels accommodated at a facility, available water sheet for over-water development, available land for landside development, and new construction vs. alterations.

Where vessels over 40'-0" are accommodated, and mean spring tide does not exceed 9.6', gangway length/slope ratios shall not exceed:

Slope	Length
1:12 ≤ 1:14	< 30'
1:14 ≤ 1:16	< 35'
1:16 ≤ 1:18	< 40'
1:18 ≤ 1:20	< 45'
1:20 and under	Unlimited

Gangways shall comply with handrail requirements in ADAAG 4.26.

EXCEPTIONS: (See Rationale)

Rationale: We do not, at this time, have adequate information, to define and defend the parameters for access less than 100%. Water level changes are one important variable. They are caused by tides, seasonal changes, snow melting, rain, dam releases, reservoir draw downs, etc. Tidal changes occur daily and predictably, while others are seasonal and less predictable (dry vs. wet years). Some are unpredictable acts of nature (flooding) while others are within human control (reservoir draw downs). SOBA and the State of California have contracted with the Scripps Institution of Oceanography to complete a tidal assessment of ocean coastal points that are representative of the types of water level fluctuations that exist nationwide. The hydrographic data period and resultant fluctuation curves may serve to support further recommendations.

A negotiated rulemaking process in Massachusetts demonstrated the feasibility of full access up to mean tide range of 9.6', with slope/section length ratio varying as follows:

Slope	Length
1:12 ≤ 1:14	< 30′
1:14 ≤ 1:16	< 35′
1:16 ≤ 1:18	< 40′
1:18 ≤ 1:20	< 45′
1:20 and over	Unlimited

A regulation has been proposed to the Massachusetts Architectural Access Board clarifying this standard for marine facilities serving scheduled water transportation vessels of 40′-0" and longer. Meeting this standard may not be feasible for smaller facilities or operators.

The subcommittee has not reviewed data on other water level changes. Additional study is required to propose scoping and technical design standards that are less than the 100% unassisted access proposed herein.

Transition Plates (Scoping)

Transition plates shall be provided at the end of moving gangways.

Transition Plates (Technical Provision)

Transition plates shall be a maximum of 96 in. in length and shall have slopes less than or equal to 8.33% in nominal marine conditions. Transition plates longer than 18 in. shall be equipped with handrails complying with 4.26. These handrails must be parallel to the handrails on the gangway, but need not be continuous with them. Transition plates shall be at least as wide at the gangway. The change in level between the end of the transition plate and the adjoining level surface shall be no greater than ½ in.

Marine Ramp (Technical Provision)

Marine ramps, when provided, shall comply with all technical provisions for ramps in ADAAG 4.8, when measured in nominal marine conditions.

Controls and Operating Mechanisms (Technical Provision)

Amend 4.27 as follows:

4.27.1 General. Controls and operating mechanisms required to be accessible by ADAAG 4.1 shall comply with ADAAG 4.27.

EXCEPTION: Pump-out stations and fuel pumps need not comply with ADAAG 4.27 if staff are available during all operating hours.

Rationale: This exception is predicated on the fact that staffing is normally provided for pump-out and fueling service to all boaters during normal operating hours because of existing environmental regulations and potential liabilities associated with fuel spills, etc.

Boarding Docks at Boat Launching Facilities (Scoping Provision)

Where boarding docks (courtesy dock or skid pier) are provided at boat launching ramps, at least one shall be accessible.

Boarding Docks at Boat Launching Facilities (Technical Provision)

An accessible boarding dock shall be minimum 60 in. wide and meet all provisions for an accessible route.

Rationale: Boarding docks may or may not be provided at launching ramps. If provided, they typically can be 30 ft., 40 ft. or longer in length; therefore, an accessible boarding dock should be a minimum width of 60 in. to permit turnaround capabilities should a site user not board a vessel and return to the launching ramp. The subcommittee discussed the alternative of a requirement for 36 in., the current minimum for an accessible route, with intermittent or intermediate turnaround areas of 60 in. x 60 in. This was not considered a practical alternative as the absence of a flush edging on the dock would present a hazard to persons with visual impairments walking along the dock as well as a hazard to boaters trying to moor.

Edges of Docks & Piers

Reserved

Rationale: Although there is no recommendation in this area, the topic is listed for discussion purposes

only. The subcommittee felt strongly that there be some edge warning for the edges of docks and piers leading to accessible boating and/or fishing facilities, but not at the boat docking area; but there was no agreement about edge protection. Detectable warnings are a controversial issue. This provision should be reconsidered when the Access Board issues its next technical provisions for detectable warnings. The research should include marine conditions, i.e., wet and moving. Given the variety of settings these standards will cover, the subcommittee suggests a broad choice for warning and/or protection purposes and leave the decision up to the property owner.

Safety Railings

Reserved

Rationale: Although there is no recommendation in this area, the topic is listed for discussion purposes only. The subcommittee recognized that safety rails are installed in many areas and believes that if safety railings are provided, they shall be 42 in. above the deck. A minimum of one horizontal midrail should be provided 34 in. above the deck to serve as a handrail. If two midrails are provided, they shall be placed at 16" and 34" above the deck. Vertical supports shall be a minimum of 16 in. apart and shall withstand vertical and horizontal force of 250 lbs. with 1/2 in. deflection. After much discussion, however, the subcommittee felt that the issues were one of general safety and not ones of accessibility. Therefore, the subcommittee will not recommend any scoping provisions for safety rails; however, if provided, the rails shall be constructed in such a manner as to meet their primary purpose of providing safety.

Marine Bridge Plates

Reserved

Rationale: The subcommittee discussed at length the issue of access onto vessels. The subcommittee decided against proposing recommendations for access onto vessels in these amendments since future amendments intend to more comprehensively address the issue of vessel access. However, the subcommittee wishes to transmit its thoughts on access, should the final decision be one to include some provisions in this area. The subcommittee urges that the Notice of Proposed Rulemaking solicit comment in this area. The subcommittee's recommendations are as follows:

Where vessels of 40' or more are provided for charter for such recreational activities as fishing, whale watching, parties, etc., then a marine bridge plate will be provided for boarding and disembarking. The marine bridge plate shall provide a transition between the platform and vessel as follows: A maximum slope of 1:8 to 1:10 is allowed for a maximum rise of 3". A maximum slope that is less steep than 1:10 and no steeper than 1:12 is allowed for a maximum rise of 6". Marine bridge plates shall have a clear width of at least 36". These requirements draw from bridge plates allowed in trains to mitigate the platform-to-vehicle gap, and from the ADAAG allowance for ramp slope/length in alterations. Handrails shall not be required on marine bridge plates. Bridge plates longer than 6'-0" are marine ramps and shall comply with all technical provisions for marine ramps.

Hoists, Lifts

Reserved

Rationale: The subcommittee discussed this issue at length and arrived at the conclusion that hoists, lifts, or any mechanical structure designed for the loading or unloading or persons with disabilities onto a vessel were not a design element of a facility structure. Rather, their purpose is to facilitate boat access, an issue more appropriately reviewed by the Department of Transportation (and U.S. Coast Guard) when developing vessel modification recommendations.

RECREATIONAL FISHING FACILITIES: SCOPING AND TECHNICAL PROVISIONS

Fishing Piers (Technical Provision)

Fishing piers shall be on an accessible route. They shall be a minimum of 8 ft. wide with a 2" toe curb provided. If a pier provides for fishing activities on both sides of the pier, the design standard shall call for a minimum 10 ft. wide pier.

Rationale: To be barrier-free, an area should be at least 8 ft. wide to allow persons with disabilities to pass behind seated anglers, allowing for a 5 ft. depth for a seated angler in a wheelchair, and a 3 ft. passing space. If a pier provides for fishing on both sides of the pier, a minimum of 10 ft. would allow for two people in wheelchairs to each have adequate turnaround space on the pier.

Fishing Stations (Scoping Provision)

Where fishing stations are provided, a minimum of 25% of the total railing area shall be accessible and shall be interspersed throughout the fishing station.

Rationale: Other design standards for the safety rail, fishing rail (angled), and tackle shelves are not included, as they are not directly access-related. They are more appropriate to design guidelines than minimum design standards.

Fishing Stations (Technical Provision)

An accessible fishing station shall have railings 32 in. high (in contrast to the standard standing angler station with railings 42 in. high), each a minimum of 8 ft. in width. A 2 in. x 10 in. board, slanted so its outer edge is at the 32 in. height and its inner edge no less than 29 in. high provides a convenient rest for fishing rods and poles. Rod holders, if provided at accessible fishing stations, shall be 1-1/2 in holes angled out at 60 degrees to the horizontal drilled in the rail and provided every 2 ft. A 9 in. wide fish retrieval opening in the railing shall be provided every 8 ft. (e.g., between a seated and standing fishing station).

Rationale: When railings have been installed, they tend to conform with an intent to "protect the user from falling into the water". This intent has led to a variety of railing heights which, in most instances, interferes with the facility's intended public use to fish. Wheelchair users are usually confronted with a bear cage effect with railings not only inhibiting fishing activity, but also resulting in a visual barrier. Interspersing seated railing heights between standing railing heights enables anglers with disabilities to have access to all areas of the facility and also to fish beside other seated or standing persons if they wish. The 9 in. wide railing opening is recommended for ease in landing a fish, particularly for wheelchair users. The design recommendations contained herein are intended to encourage fishing activities by all public users, including persons with disabilities and small children.

Fish Cleaning Stations (Scoping Provision)

Where fish cleaning stations are provided at least one 36 in. section shall comply with ADAAG 4.32 (Fixed or Built-In Seating or Tables). Where a sink is provided, it shall comply with ADAAG 4.24 (Sinks).

DEVELOPED OUTDOOR RECREATION FACILITIES SUBCOMMITTEE

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IV. SNOW FACILITIES ACCESSIBILITY RECOMMENDATIONS

☛ These recommended accessibility guidelines are provided for public comment only. They are neither final nor enforceable.

INTRODUCTION AND OVERVIEW

The Developed Outdoor Recreation Facilities subcommittee was charged with the development of recommended standards for the unique facilities associated with the outdoor recreation environment. Existing standards have primarily addressed facilities and structures usually found in the highly developed environment and have not addressed the range of facilities usually found in the outdoor recreation areas. In addition, outdoor recreation areas typically involve varying degrees of development and modification. Some areas are highly modified and equate closely with the built environment. Other areas are left purposely preserved in their most natural condition so people can get as far away from the developed environment as possible. Still others are developed to varying degrees between those two extremes. The subcommittee has attempted to develop recommendations that provide the highest degree of access practicable and feasible, commensurate with the amount of development, while at the same time preserving and protecting the fundamental nature of the various elements of the outdoor recreation environment.

Efforts to address the complexities of accessibility in the outdoor recreation environment did not begin with the establishment of this subcommittee. Substantial interest and activity on this issue has been underway for several years and the subcommittee has been able to draw heavily from those preceding activities. Some of the most influential projects that were used in the subcommittee's efforts included the National Access Task Force effort which began in 1987 by the USDA Forest Service; the U.S. Department of the Interior book entitled "A Guide to Accessible Outdoor Recreation Facilities"; the New Mexico Natural Resources Department publication entitled "Accessible Fishing"; the ATBCB Federal Working Group on Accessible Outdoor Recreation report; and the standards development projects conducted by the State of California, and the State of New Jersey. Finally over the past two years, the USDA Forest Service, State, and local government agencies and other private partners, have been compiling a comprehensive set of guidelines that has resulted in a publication entitled "Universal Access to Outdoor Recreation: A Design Guide." This publication reflects the analysis and synthesis of all of the other publications as well as the input from a large number of public/private sector accessibility specialists, designers, planners, persons with disabilities, and consumers of accessible outdoor recreation. These projects and publications, and others have provided the foundation for this report.

The subcommittee was chaired by David Park, Chief, Office on Accessibility, National Park Service, U.S. Department of the Interior. Members of the subcommittee included Joseph Meade, National Access Program Manager, USDA Forest Service; Drue

Kale, New Jersey Department of Community Affairs; Judith Rice, U.S. Army Corps of Engineers; Peter Axelson, Beneficial Designs, Inc.; and Jack Buchheister, American Ski Federation. In addition to the subcommittee members, substantial assistance was given by a wide range of staff from the USDA Forest Service, the National Park Service, other Bureaus of the Department of the Interior, The National Center on Accessibility at Indiana University, several State Departments of Natural Resources, various elements of the ski industry, and numerous organizations representing people with disabilities. Throughout the process of the development of this report, the recommendations have been presented to numerous meetings and conferences, and individuals from a wide range of agencies and organizations have provided direct input and suggestions.

The subcommittee began its work by attempting to define the parameters of the outdoor recreation environment that would not be covered by other subcommittees. Consequently recommendations were developed for picnic areas, campgrounds, recreation trails, scenic overlooks, beach access, equestrian facilities, and snow facilities. In addition to the specific design criteria for these elements, a number of other critical issues are addressed in the report. The report draws a distinction between an access route, as currently defined in ADAAG and UFAS, and a similar route in the outdoor recreation environment. Consequently, the new term of outdoor recreation access route is introduced. Also, a distinction is clearly made between an outdoor recreation access route and a recreation trail. Design criteria are provided for both outdoor recreation access routes and for recreation trails.

The most critical issue addressed in the report is the issue of balancing accessibility with the preservation of the fundamental nature of the outdoor recreation environment. The report is based upon the basic premise that there is a spectrum of recreation settings that occur in the outdoor environment, ranging from highly developed to undeveloped and primitive. The report also affirms that this diversity of settings should continue to exist for all people, since it affords each recreationist a choice. The report identifies four different environments that exist in outdoor areas. These four areas relate largely to the degree of development and modifications to the natural environment. The areas include the highly developed or urban; the moderately developed or natural; the minimally developed or back-country; and the undeveloped or primitive area. The report recommends that the degree of access may vary, based on several factors: the amount of structural modification, topography and other natural features; and the type of recreation experience. It outlines three degrees of accessibility that relate to the first three areas of the environment, and recommends that no standards will apply in the primitive environment.

Finally, the report attempts to outline a process by which decisions can be made regarding the degree of access which should be provided at recreation areas. The report outlines two separate processes which identify the three degrees, but provide alternative procedures for moving from one degree of access to another. Comments and reactions are being solicited with regard to the two alternatives.

In the snow facilities work group of the subcommittee, members attempted to define the areas of concern for accessibility. The group then addressed those areas by trying to balance the fundamental nature of the sports on snow and the basic fundamentals of accessibility. The major areas of concern were the climatic and environmental conditions under which these facilities are constructed. The difficulty in providing accessibility at snow facilities at the level generally expected in urban environments and summer climates is difficult if not impossible while taking into consideration the fundamental nature of the sports conducted in winter climates. Balancing safety and accessibility in the area of passenger tramways was a great concern. The final recommendation of the group was to reserve those sections relating to safety and accessibility. A one year research project to be conducted by the ANSI B77.1 Committee was recommended prior to developing a standard in this area. ANSI B77.1 Standards for Tramway Design and Construction have been adopted in all 50 states and by the USDA Forest Service. The subcommittee introduces recommendations for unique snow facilities such as: Snow Access Routes, Base Area Facilities, On-Mountain Facilities and Skier Staging Areas. The group encourages input from users as

well as providers of winter activities to these recommendations.

QUESTIONS

A. DEVELOPED OUTDOOR RECREATION ACCESSIBILITY GUIDELINES AND RECOMMENDATIONS:

1. The content within the following report is based upon the important premise that outdoor recreation occurs across a diversity of recreation settings, ranging from highly developed, moderately developed, minimally developed, to areas which are undeveloped and are often managed for natural preservation. Commensurate degrees of accessibility have been established to fit within those settings and the related levels of development.

Reaction to this approach in applying practical standards in the diversity of outdoor sites is requested.

2. To accommodate the highly, moderately, and minimally developed sites acknowledged above and discussed at length in this report, three degrees of accessibility, easier, moderate, and difficult, are recommended which correlate with the amount of site modification and development as well as the natural environment and rugged terrain.

In reviewing this section of the report does this gradation of three degrees of accessibility seem appropriate? Substantive comments are welcome.

3. As noted above, Section II (4.0), of this report recommends guidelines for two types of outdoor paths: a) an outdoor recreation access route (ORAR) which can be compared to an access route in an urban environment, connecting accessible parking and providing a path of travel to a building or site entrance. The ORAR provides these same linkages in an outdoor recreation environment; and, b) recreation trails are typically a recreation activity themselves and so guidelines are offered to blend an accessible trail into the natural terrain and provide a range in challenge and experiences.

Is the distinction between the ORAR "access route" from the activity of a recreation trail important?

4. The next important consideration is how to determine the appropriate degree of accessibility at any given outdoor recreation site. The report proposes that the highest degree of access practicable and feasible be provided when designing outdoor recreation access routes and recreation trails. Two alternatives have been presented to determine the highest degree of accessibility practicable and feasible.

Alternative A: This approach, found in Section II (5.9.1 and 6.7.1), bases the determination of highest degree of access practicable and feasible on the consideration of five interrelated factors present in the outdoor recreation environment. The five factors are: recreation setting, condition of the natural environment, amount of structural modification, recreation experience, and consultation with people with disabilities. Given the nature of the outdoor environment, some settings may be inherently inaccessible because of steep terrain, geologic features, cultural or historic character, etc. This approach strives to balance providing the highest degree of access with protecting the fundamental nature of the recreation setting or experience through analysis of the five factors and direct consultation with people with disabilities and consumers of accessible outdoor recreation.

Alternative B: This approach, found in Section II (5.9.2 and 6.7.2), defines highest degree of access at the onset to be the easier degree for all recreation settings and environments unless it would change the fundamental nature of the activity or environment. Exceptions can then be invoked to modify the degree of access, on a standard by standard basis, because of severe elevations, geologic features, historic character, or the specific purpose of a trail. Documentation for the exception must include evidence that people with disabilities or their representatives were involved in the decision.

Please review these alternatives and offer substantive input as to which best addresses accessibility across a diversity of outdoor settings.

Please review these alternatives and offer substantive input with regard to practical implementation, enforcement etc.

5. This report recommends guidelines for highly, moderately and minimally developed sites. It does not recommend guidelines for undeveloped/primitive areas. The premise is that the more a site is developed, the higher the responsibility and requirements for an easier degree of access. This ensures a diversity of choice for accessible recreation. Refer to Section II (2.0-2.4).

Should guidelines be considered in minimally developed areas where site development and amenities are few?

Should guidelines only be recommended in areas of greater development such as those defined in highly or moderately developed recreation areas?

6. **To what extent should deviations from standards be permitted in areas of unique geology, vegetation, and/or topography, i.e., the tundra of Alaska, the everglades of Florida, or the high mountain peaks of Washington?**

7. Current standards for an access route in the urban/built environment requires a firm, stable, and slip resistant surface. **To what extent is a slip resistant surface practicable and feasible in natural outdoor environments where the construction practices utilize materials such as native soil and packed gravel and are subject to the natural elements, i.e. thunder showers, snow, intense sunshine?**

8. In pursuing outdoor recreation, a diversity of individuals pursue a diversity of outdoor recreation experiences which fosters a range of stamina, challenge, skill, risk, and interest. A fundamental premise in this report is to ensure that this same diversity of choice exists for consumers of accessible outdoor recreation.

Please offer any thoughts on the report's adequacy of achieving this and/or if you feel this choice is important.

B. SNOW FACILITY ACCESSIBILITY GUIDELINES AND RECOMMENDATIONS:

1. Snow activities include, but are not limited to: downhill skiing, cross country skiing, tubing, sliding, snowmobiling and other activities. The fundamental nature of most of these activities require smooth movement over snow using devises and equipment. Snow and surface conditions change on a daily or even an hourly basis due to climatic and weather conditions. Many of the generally acceptable guidelines for accessibility are not feasible or attainable, i.e., firm, stable and slip resistant.

Do these guidelines balance the fundamental nature of the winter sports activity and accessibility?

2. In the proposed recommendations for snow facilities, specific distances from accessible parking to base area facilities has been required. If these minimum distances cannot be met, an accessible transportation system from parking to activities is required. These minimum distances are being recommended because of winter snow conditions and the weight and bulk of adaptive ski equipment.

Is this acceptable? Are the distances too restrictive? Not restrictive enough?

3. The use of passenger tramways and other transportation devices is integral to the operation of a snow activity area. This report reserves accessibility requirements for lifts pending a one year research project to be accomplished by the ANSI B77.1 Committee. ANSI B77.1 has been adopted by all 50 states and the United States Forest Service as the National Standard of Ski Lift Design, Construction and Safety. Areas to be addressed in the research study are as follows: tramways used for foot passenger use only, chairlift seat height, chairlift seat thickness, seat profile, approach path grade, safety retention devises, and surfacing at lift loading areas and lift loading point. Please refer to Section IV (8.0) for additional discussion.

What are your comments concerning other lift related issues? Are there other areas of concern with lift access that have not been addressed?

4. Access routes and outdoor travel is difficult while snow is falling and accumulating. These guidelines recognize that snow activities take place in adverse weather conditions which makes accessibility difficult.

Does Section IV (2.0 General) adequately address this issue?

I. INTEGRATING ACCESSIBILITY INTO OUTDOOR RECREATION ENVIRONMENTS

The following section is provided to highlight relevant research, philosophy, and professional literature regarding the development and design of outdoor recreation sites, facilities, and the related customer expectations and interest in the subject. It is presented here as an important introduction for considering how to best integrate successful accessible designs into these settings. The goal is to fully integrate the highest degree of accessibility practicable, regardless of the recreation setting. The degree of accessibility provided at each recreation area should be consistent with the amount of structural modification or development, and user expectations and interests, while respecting the integrity of the natural environment and type of recreation experiences being sought. It is not the intent of these recommendations to fundamentally alter, threaten, or destroy the character of the recreation setting or associated recreation experiences.

The great outdoors presents a tremendous diversity of recreational opportunities. Likewise, the recreating public represents a tremendous diversity of recreational interests and needs. From city parks to pristine wilderness, people look to the outdoors to satisfy their recreational needs. In doing so, they attempt to match their desires, abilities, and expectations to a particular activity and setting. Recreation researchers have long recognized the importance of this relationship between expectations and settings. Many have suggested that recreation managers should provide a range or continuum of opportunities to best serve the diversity of public tastes for recreation.

The recreation management approach used by many land management agencies, developed by the USDA Forest Service is called the "Recreation Opportunity Spectrum" (ROS). The ROS provides a framework for defining classes of outdoor recreation environments, from urban, highly developed settings, to primitive, unaltered environments. These categories are defined primarily in terms of perceivable modifications to the natural environment, e.g., the presence of roads and trails or the existence of buildings, facilities, and conveniences. It can be applied to all lands regardless of ownership or jurisdiction. The ROS framework also recognizes and organizes accessibility as a primary recreation expectation for all people, irrespective of ability.

The ROS is based the following premises:

- People purposefully choose settings for their recreation activities.

- Expectations regarding accessibility are often central to that choice.

- Choices are made with the expectation of achieving particular recreation experiences.

- It is desirable to present a diverse spectrum of recreation settings, ranging from highly developed to primitive in accordance with the natural environment, from which people may choose.

For the purposes of the work of this subcommittee, the recreation setting classifications have been combined into four basic categories: urban/rural; natural; back-country (semi-primitive); and primitive. Since researchers have long recognized that recreation settings and sites present inherent levels of difficulty or challenge, it follows that each recreation setting classification has an associated expectation regarding the level of accessibility. As the level of development and modification decreases along the spectrum, expectations of comfort, security, and accommodation for accessibility are also expected to diminish, while expectations of rusticity, challenge, and risk increase:

- Urban areas, because they are highly developed, evoke expectations of easy accessibility.

- Natural settings are farther along the spectrum; they are less developed than urban areas, but more

developed than semi-primitive, and thus evoke expectations of moderate accessibility.

• Back-country (semi-primitive) areas are rarely developed, so expectations of difficult accessibility prevail.

• Primitive areas are primarily undeveloped and have few, if any, environmental modifications; these settings evoke expectations of the most difficult accessibility.

Because accessibility is an important recreation expectation, every site should be developed to provide the level of accessibility that would normally be expected within its recreation setting classification. A critical component of these guidelines is that *all structural improvements in developed recreation settings will always comply with ADAAG* spatial requirements. Furthermore, the goal of integrating accessibility into the outdoor environment should be to provide the highest level of accessibility practicable, within the constraints of the natural environment (i.e. terrain, geological features) and the degree of structural modification. This will maximize recreation satisfaction and better serve public needs.

The built environment and the outdoor recreation environment are fundamentally different. The built environment creates an environment to suit human needs at home and at work. It is an environment of fixed elevations and well-defined parameters intended to accommodate the ordinary but necessary activities of everyday life. The outdoor recreation environment is the domain of leisure and extraordinary activities. It is an environment that offers dynamic and challenging opportunities on land, water, and even in the air. Although aspects of the outdoor recreation environment are sometimes constructed, modifying the natural environment, this generally is done only to provide access, ensure safety, or protect the natural resources. Nature trails, for example, are provided to allow people access to nature. Sidewalks, on the other hand, are provided to ensure safety in, and access to, various aspects of the already highly developed built environment.

One of the most critical aspects of accessibility in outdoor sites is the system of paths that connects the various recreation elements and spaces within the context and constraints of the natural environment. This subcommittee has identified two types of paths in outdoor recreation sites and is recommending separate accessibility guidelines for each:

Outdoor Recreation Access Routes are paths that connect the primary spaces and elements that are basic to the recreation experience being offered at the site.

The guidelines for outdoor recreation access routes are applicable in highly developed sites (urban/rural settings), moderately developed sites (roaded natural settings), and minimally developed sites (semi-primitive settings), where visitors will expect the basic support services and primary activities of the site to be accessible at an easy or moderate level of accessibility.

Designers and managers must determine which of the activities and elements at a recreation site are basic to the recreation experience being offered. This ensures that there is a comprehensive system of outdoor recreation access routes connecting all primary activities and elements with each other and with accessible parking spaces and facility entrances. This determination must be based on visitor expectations regarding levels of accessibility, the recreation setting, the amount of site development, and constraints or opportunities presented by the natural environment.

Recreation Trails are paths that provide access to recreation activities and elements that are not the primary activities at the site.

Recreation trails, typically 1/4-mile or more in length, provide access to lesser-developed areas of a site, where natural features are emphasized along with customer expectations and the level of development when determining accessibility modifications. The guidelines for accessible recreation trails should be considered in highly developed sites (urban/rural settings), moderately developed sites (roaded natural settings), and minimally developed sites (semi-primitive settings).

Recreation trails provide varying levels of accessibility, based on the recreation setting and visitor expectations. The accessibility guidelines for

recreation trails balance accessibility and recreation considerations and expectations so that efforts towards improving access do not undermine the very nature of the recreation activity being pursued. For this reason, the guidelines are less stringent than the guidelines for outdoor recreation access routes.

In addition to providing access to recreation activities that are not among the site's primary activities, many recreation trails are considered a recreation activity in and of themselves (i.e., hiking trails). Recreation trails can be short, more developed trails--such as a trail connecting a trailhead, visitor center, or parking area with a recreation activity--or longer, less developed trails that provide for hiking in the natural outdoors.

SCOPING INFORMATION

In the outdoor recreation environment, scoping requirements should be structured to ensure that accessibility is provided where and when it is expected, and at the level of accommodation expected given a site's recreation setting, level of structural modification, and constraints imposed by the natural features.

In the built environment, all aspects of a site or facility should be accessible, accommodating the broadest possible range of human abilities. In the outdoor recreation environment, accessibility may in some instances be impracticable due to site characteristics such as steep slopes or dense vegetation. For example, a hiking trail that steeply ascends a sheer rock cliff in a very short distance may be impossible to grade or pave. Even when practicable, modifications to improve access might alter the area's character, and the long-term impact may not always be positive.

Conflicts between accessibility and preservation of the recreation environment are most common in moderately and minimally developed settings, where moderate to difficult levels of accessibility are expected but may not be achievable without excessive modification of the site. Natural elements, such as water, geologic features, steep terrain, or cultural resources, can make sites naturally inaccessible. Typically, the most problematic design elements will be the paths that connect the site's various elements and spaces.

There is a direct correlation between customer expectations and degrees of access, which implies that the level of accessibility may vary between sites. This approach is consistent with one of the primary tenets of accessibility regulations which states that modifications for accessibility are not required if they would change the fundamental nature of the activity. The fundamental purpose of many outdoor recreation experiences is to enjoy the outdoor environment in its most natural and untouched condition. For these reasons, modifications should not always be made solely for the purpose of accessibility.

A decision-making procedure should be followed to ensure that accessibility expectations are met without impacting the characteristics that make the site a desirable setting for recreation. This subcommittee has developed alternative approaches for determining the appropriate degree of access for recreation areas, sites, or facilities. These approaches are presented in Section II, 5.0 and 6.0.

TECHNICAL INFORMATION

Technical information is based on anthropometrics, human performance data, and ergonomics. The average adult wheelchair user requires a clear ground space of at least 60 inches diameter to negotiate a pivot turn. This space requirement remains constant irrespective of environment--wheelchair users require the same clear ground space to negotiate a pivot turn whether they are in the foyer of a building or in a camping site.

Because some elements and spaces common to the built environment are also provided at outdoor recreation sites, and because compliance with UFAS or ADAAG is required by law, these standards must be directly applied, where appropriate, in all settings. Thus, elaborate flush toilet facilities at highly developed campgrounds and rustic outhouses provided in accessible semi-primitive settings will be accessible (i.e., they will conform to UFAS or ADAAG).

UFAS and ADAAG also provide the basis for establishing accessibility criteria for elements and spaces that are not currently addressed by accessibility standards but which nonetheless can be found in both the outdoor recreation environment and the built environment (e.g., picnic tables and barbecues). However, these criteria must be extrapolated.

The accessibility criteria presented in UFAS and ADAAG may also be extrapolated for those elements and spaces that are unique to the outdoor recreation environment. The extent of extrapolation must be determined based on the item in question within the context of the recreation site and its setting. For example, hiking trails are not directly addressed, but accessible routes are. The extent to which the requirements for accessible routes are applied to a particular hiking trail will depend on the expected level of accessibility, as evoked by the site's setting, level of development and natural features. Hiking trails in urban/rural settings, where an easy level of accessibility is expected, will more closely follow UFAS and ADAAG requirements (both in terms of direct application and extrapolation) than trails in lesser developed settings where expectations of moderate, difficult, and most difficult levels of accessibility prevail.

The applicability of existing standards to the outdoor recreation environment diminishes as the gulf between the built environment and the outdoor recreation environment becomes wider. There may also be cases where elements and spaces in the outdoor recreation environment cannot be addressed even through extrapolation of existing standards. In these cases, new accessibility criteria must be developed.

II. GENERAL ELEMENTS AND SPACES

When designing outdoor recreation sites, accessibility should be universally integrated throughout the developed and improved features provided at a site to the fullest extent practicable. As noted in section I, basic spatial dimensions for accessibility for a broad range of users is well established for the built environment, addressed as part of ADAAG. These standards should be used in extrapolating guidelines for the elements and spaces in outdoor environments.

This section discusses the general elements and spaces which are vital to all outdoor sites. The following are minimum guidelines for accessibility in the most common elements and spaces of the outdoor recreation environment. Scoping provisions are provided for each set of guidelines to assist designers in determining when a particular element or space must be constructed in accordance with these guidelines. This report recognizes that the elements and activities discussed herein are not all inclusive, but instead they serve as a guide to design in the outdoor environment. Elements and spaces in highly developed (urban/rural) and moderately developed (natural) settings that are not addressed in these guidelines should be designed using the anthropometric data presented in Section II, Space Allowances and Reach Ranges.

1.0 DEFINITIONS

*Note that italicized words represent recommended additions/changes to ADAAG definitions.

Access Aisle. An accessible pedestrian space between elements, *such as parking spaces or picnic tables*, that provides clearances appropriate for use of the elements.

Accessible. According to ADAAG, the term "accessible" is used to describe a site, building, facility, or portion thereof that complies with the ADA guidelines. According to UFAS, the term "accessible" describes a site, building, facility or portion thereof that "complies with these standards [UFAS] and . . . can be approached, entered, and used by physically disabled people." In this report, extrapolations have been made to integrate accessibility in outdoor recreation environments. In relation to this effort, the term "accessible" describes a site, building, facility, or portion thereof that (1) complies with the guidelines presented herein and (2) can be approached, entered, and used by people with physical disabilities in accordance with the expectations of accessibility evoked by the setting's level of development and desired expected recreation experience.

Accessible Element. An element that complies with the guidelines presented in this report *(for example, a picnic table, fire ring, or telephone).*

Accessible Space. A space that complies with the guidelines presented in this report *(for example, a fishing facility, assembly area, or restroom).*

ANSI. Acronym for American National Standards Institute, a national, non-governmental organization that publishes a wide variety of voluntary standards, including ANSI A117.7, which provided the technical basis for the first accessibility standards adopted by the Federal government and most State governments.

Circulation Path. A way of passage from one place to another for pedestrians, including, but not limited to, paths, hallways, courtyards, crosswalks, stairs, and stair landings.

Clear *Ground or Floor Space*. The minimum unobstructed *ground or floor space* required to accommodate a single, stationary wheelchair and occupant.

Common Use Area. Refers to those rooms, spaces, or elements that are made available for the use of an unrestricted group of people *(for example, the office area of a ranger station).*

Difficult Degree of Access. The general level of expected access to elements and spaces integrated into lesser developed recreation sites or portions of sites. These are typically in back country settings, or at sites managed to provide back country recreation experiences, or at sites managed to provide a difficult degree of access as defined by these guidelines.

Easier Degree of Access. The general level of expected access to elements and spaces integrated into developed recreation sites or portions of sites. These are typically in urban/rural settings, or at sites managed to provide urban/rural recreation experiences, or at sites managed to provide an easier degree of access as defined by these guidelines.

Element. An architectural or mechanical component of a space or site, e.g., telephone, curb ramp, door, drinking fountain, *picnic table, or fire ring.*

Maximum Grade (Ramp). A walking surface in a developed setting that has a running slope greater than 1:20. In the less developed environment of outdoor recreation sites, ramp functions are typically accomplished via the maximum grade segments of outdoor recreation access routes and recreation trails.

Moderate Degree of Access. The general level of expected access to elements and spaces integrated into moderately developed recreation sites or portions of sites. These are typically in natural settings, or at sites managed to provide natural recreation experiences, or at sites managed to provide a moderate degree of access as defined by these guidelines.

Most Difficult Degree of Access. The general level of expected access to elements and spaces integrated into undeveloped recreation sites or portions of sites. These are typically in primitive settings, or at sites managed to provide primitive recreation experiences, or at sites managed to provide the most difficult degree of access as defined by these guidelines.

Outdoor Recreation Access Route. A path that connects the primary accessible elements and spaces that are basic to a recreation site, including accessible parking spaces and site entrances. Such paths are typically less than 1/4-mile in length (see recreation trails). Paths that provide access to major structures, such as visitor centers and office complexes, shall be provided by access routes that meet ADAAG 4.3.

Primitive Recreation Setting. An undeveloped recreation area in which structural modifications are rare, preservation of the natural environment is paramount, and visitors expect the most difficult degree of access.

Recreation Opportunity Spectrum (ROS). Land use management taxonomy based on a development scale and used by the USDA Forest Service as outlined in the ROS Primer Field Guide.

Recreation Trail. Recreation trails are generally longer in distance than outdoor recreation access routes, typically 1/4-mile or longer. They provide access to recreation activities that are not among the sites primary elements and spaces. Often, recreation

trails are considered a recreation activity in and of themselves (i.e., a hiking trail). See Section III; 2.0.

Roaded Natural Recreation Setting. A moderately developed recreation area in which structural modifications have been made but are not extensive and such modifications emphasize the use of natural materials and preservation of natural features. Visitors expect a moderate degree of access.

Semi-Primitive Recreation Setting. A mostly undeveloped recreation area in which structural modifications are few, preservation of the natural environment is of high priority, and visitors expect a difficult degree of access.

Space. A definable area, e.g., a restroom, assembly area, campsite, or swimming area.

Sustained Running Grade. The slope or grade of a trail over a lineal distance.

Urban/Rural Recreation Setting. A developed recreation area in which there are significant structural modifications and accessibility to recreation elements and spaces is of high priority. Visitors expect an easier degree of access.

2.0 HIGH, MODERATE, AND LOW LEVELS OF SITE DEVELOPMENT

2.1 HIGHLY DEVELOPED (URBAN/RURAL) RECREATION SETTINGS

Highly developed recreation settings are characterized by substantially urbanized and modified natural environments. Although sites may still appear natural, vegetation is often manicured. Sights and sounds of humans on-site are predominant. Large numbers of visitors can be expected, both on-site and in nearby areas. Facilities for highly intensive motor vehicle use, parking, and mass transit are often available.

Recreation sites and opportunities are convenient, and there is high probability of experiencing affiliation with individuals and groups. Experiencing natural environments, having challenges and risks afforded by the natural environment, and using outdoor skills are relatively unimportant.

Construction materials used in these settings reflect an urbanized character. Trails and roads are typically paved, either asphalt, concrete, or similar hardened surface.

2.2 MODERATELY DEVELOPED (ROADED NATURAL) RECREATION SETTINGS

Moderately developed recreation settings are characterized by natural appearing environments with moderate evidence of human activity. Interaction between users will be low to moderate. Resource modification and utilization practices are evident, but harmonious with the natural environment. Conventional motor vehicle use is accommodated.

Approximately equal probability of experiencing affiliation with other user groups and experiencing isolation from the sights and sounds of humans. Opportunities for a high degree of interaction with the environment are common. The challenge and risk opportunities associated with more primitive types of recreation are not very important. Practice and testing of outdoor skills may be important.

Construction materials are more rustic; trails and roads may be paved, but are more likely constructed of natural-appearing surfaces such as compacted crushed gravel.

2.3 MINIMALLY DEVELOPED (SEMI-PRIMITIVE) RECREATION SETTINGS

These settings are characterized by a predominantly natural-appearing environment of moderate to large size. Interaction between visitors is low, but there is often evidence of others. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motor vehicle use may be prohibited at some sites.

The recreation experience associated with these settings--moderately high probability of isolation from the sights and sounds of humans--provides opportunities for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is very important since recreation opportunities often present a moderately high degree of challenge and risk.

Constructed features in these settings are limited, and modifications to the natural landscape are minimal and unobtrusive. Construction materials used reflect the importance of maintaining the predominantly natural-appearing character of the setting. Road and trail surfacing, if provided, is typically natural, i.e. native soil; use of foreign or imported material such as crushed rock is rare.

2.4 UNDEVELOPED (PRIMITIVE) RECREATION SETTINGS

These settings are typically characterized by pristine and rugged, unmodified environments of fairly large size. Interaction between users is very low, and evidence of others is minimal. The area is managed to be essentially free from developments and evidence of human-induced restrictions and controls.

There is an extremely high probability of experiencing isolation from the sights and sounds of humans in these settings. Opportunities abound for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is imperative. Recreation opportunities often present high degrees of challenge and risk.

Modifications to the natural environment are primarily made for resource protection; roads are generally not provided. The surface of trails is natural and may present many rocks, downed logs, and other naturally occurring obstacles. The guidelines presented in this report are generally not applicable to these undeveloped settings.

3.0 SPACE ALLOWANCES AND REACH RANGES (ADAAG 4.2.1-4.2.6)

Space requirements and reach ranges are based on anthropometrics, human performance, and ergonomics. Because of this, they remain consistent irrespective of environment, whether indoors or outdoors. These same ADAAG specifications can be used in guiding design of any element or space.

4.0 PATHS IN OUTDOOR RECREATION ENVIRONMENTS

4.1 GENERAL OVERVIEW; RATIONALE

The paths that provide access to the elements and spaces of a recreation site are among the most critical factors for ensuring accessibility. While the elements and spaces of a site may meet strict accessibility standards, a person with a disability will be unable to access and enjoy those elements independently if the path leading to them is inaccessible.

According to ADAAG, an "accessible route" is a continuous unobstructed path connecting accessible elements and spaces. This route must meet the accessibility guidelines for the built environment presented in ADAAG. Due to the complexities of outdoor recreation environments, this report distinguishes between two types of paths that provide "accessible routes" in outdoor recreation settings, outdoor recreation access routes and recreation trails, both of which are defined in this glossary.

Paths in outdoor recreation sites fall into two categories:

1. Paths that provide access to the primary elements and spaces that are basic to the recreation site, called Outdoor Recreation Access Routes, which are typically less than 1/4-mile in length; and

2. Paths that provide access to the sites other, lesser-developed recreation elements and spaces, called Recreation Trails. These trails are typically 1/4-mile or more in length, connecting the lesser developed recreation activities with the site's access points and serving as part of the recreation experience itself.

This report provides accessibility guidelines for both outdoor recreation access routes and recreation trails. These guidelines are extrapolated from ADAAG, and differ because of the natural environments these paths traverse; the level or amount of site development they entail; the standard construction practices applied in outdoor settings; and the different degree of access that visitors will expect for each type of path commensurate with the associated recreation setting. In addition as is discussed in

section I, in order to preserve the quality, integrity, and opportunities of the natural environment, it is critical that designs blend into natural features such as vegetation, geology, and terrain.

5.0 OUTDOOR RECREATION ACCESS ROUTES

Outdoor recreation access routes are the paths that connect the primary developed spaces and elements that are basic to the recreation experience being offered at the site. For example, the outdoor recreation access routes at a picnic ground are the paths linking the parking area, restrooms, picnic units, and water hydrants. While many of these elements—parking area, restroom, and water hydrant—are not the primary reason for a person to visit the site, they are basic developed elements that serve all visitors.

Designers and managers in consultation with users, must determine which of the developed activities and elements at a recreation site are basic to the recreation experience being offered. Further, they must ensure that there is a comprehensive system of outdoor recreation access routes that connect all primary elements and spaces with each other and with accessible parking spaces and facility entrances. This determination should be based on visitor expectations as well as the level of development at the site.

5.1 NUMBER AND LOCATION OF OUTDOOR RECREATION ACCESS ROUTES (ADAAG 4.3.2)

At least one outdoor recreation access route, located entirely within the site boundary, must connect public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets or sidewalks with the accessible entrance(s) to the recreation site and its primary developed activities and elements. To the maximum extent feasible, the outdoor recreation access route must coincide with the route for the general public.

Within the site, at least one outdoor recreation access route must connect the accessible, developed primary activities and elements.

5.2 DESIGN OF OUTDOOR RECREATION ACCESS ROUTES

The guidelines for outdoor recreation access routes are applicable in highly developed settings, moderately developed settings and minimally or low developed settings where visitors will expect easier, moderate, or difficult degrees of access to the site's primary elements and spaces. Access to major structures, such as visitor centers and office complexes, should be provided by access routes that meet ADAAG 4.3.

Summary of Design Standards for Outdoor Recreation Access Routes			
	Level of Development:		
	High Easier	Moderate Moderate	Minimal Difficult
• clear width (minimum):	48 inches	36 inches	36 inches
• sustained running grade* (maximum):	5 percent	5 percent	8 percent
• maximum grade allowed:**	8 percent	10 percent	10 percent
• for a maximum distance of:	30 feet	50 feet	50 feet
• cross slope (maximum):**	3 percent	3 percent	3 percent
• passing space interval (maximum):	200 feet	300 feet	400 feet
• rest area interval (maximum):	400 feet	900 feet	1200 feet
• small level changes (maximum):	½ inch	½ inch	1 inch

*Note: No more than 20 % of the total length of the outdoor recreation access route shall exceed the maximum sustained running grade.

**Note: The measurement of a maximum grade and cross slope should be made over a 24" measurement interval to correspond to the footprint of a wheelchair operating in that environment.

5.2.1 Width (ADAAG 4.3.3). The required minimum clear width for an outdoor recreation access route varies based on the expected level of access for each recreation setting:

Degree of Access	Level of Development	Required Clear Width
easier	high (urban/rural)	minimum 489 in. (1220 mm)
moderate	moderate (natural)	minimum 36 in. (915 mm)
difficult	low (back country)	minimum 36 in. (915 mm)
most difficult	none (primitive	not applicable

In all settings, the clear width may reduce to 32 inches (815 mm) for a maximum distance of 2 feet. In urban/rural settings, if the route must pass through significant geological features (e.g., rock formations) or between aesthetically important vegetation (e.g., large trees), the route may reduce to 36 inches (915 mm) for a maximum distance of 10 feet.

5.2.2 Sustained Running Grade (ADAAG 4.3.7). The slope of an outdoor recreation access route must not exceed 1:20 (5 percent) in highly developed

(urban/rural) and moderately developed (natural) settings and 1:12 (8.33 percent) in minimally developed (back country) settings. Segments of an outdoor recreation access route where the running grade is greater must be designed according to the guidelines for maximum grades in section 5.5, Maximum Grade.

5.2.3 Cross Slope (ADAAG 4.3.7). Cross slope can make a pathway difficult to navigate for a person using a wheelchair or other mobility aid. Although some cross slope is desired to prevent water accumulation on the path surface, the cross slope should never exceed 3 percent (1:33) in all settings.

Rationale: Construction equipment and materials used in the outdoor environment typically differ from those used in the built environment. Because of this, tight specifications of a 2% slope, as cited in ADAAG, are often difficult to achieve.

5.2.4 Passing Space (ADAAG 4.3.4). If an outdoor recreation access route has less than 60 inches (1525 mm) of clear width, passing spaces must be provided at reasonable intervals, as shown below. Each passing space must be at least 60 inches by 60 inches (1525 mm by 1525 mm). A T-intersection of two corridors or walks is also an acceptable passing place. Designers are encouraged to use naturally occurring topographic features to provide passing spaces in recreation settings.

Degree of Access	Level of Development	Interval of Passing Spaces
easier	high (urban/rural)	not to exceed 200 ft. (61 m)
moderate	moderate (natural)	not to exceed 300 ft. (91.5 m)
difficult	minimal (back country)	not to exceed 400 ft. (122 m)
most difficult	none (primitive)	not applicable

An outdoor recreation access route with a clear width of 60 inches (1525 mm) allows the passage of two wheelchairs and eliminates the need for passing spaces. However, 60-inch (1525 mm) wide routes may not be appropriate in all recreation settings. The decision to construct a 60-inch (1525 mm) wide route should be commensurate with levels of development considerations and expectations of accessibility.

5.2.5 Rest Areas at Passing Spaces. Passing spaces can provide valuable rest areas for all people. In urban/rural and roaded natural settings, benches and other types of fixed seating should be provided adjacent to passing spaces as a matter of convenience and accommodation. Along outdoor recreation access routes, rest areas should be incorporated into the design of passing spaces at reasonable intervals as follows:

Degree of Access	Level of Development	Interval of Rest Areas
easier	high (urban/rural)	minimum every other passing space
moderate	moderate (natural)	minimum every third passing space
difficult	minimal (back country)	minimum every third passing space
most difficult	none (primitive)	not applicable

Benches and other types of fixed seating at rest areas should be accessible, designed in accordance with guideline section II, 15.0.

5.2.6 Small Level Changes (ADAAG 4.5.2). The surface of outdoor recreation access routes in settings with a high level of development and moderate level of development may have vertical changes in level of up to 1/2 inch (13 mm) without any edge treatment. In these settings, changes in level between 1/2 inch and 1 inch (13 mm and 25 mm) are allowed if they are beveled with a slope no greater than 1:2. In minimally developed settings, the surface of outdoor recreation access routes may have vertical changes in level of up to 1 inch (25 mm) without any edge treatment and changes in level between 1 inch and 2 inches (25 mm and 51 mm) must be beveled with a slope no greater than 1:2.

If the surface of an outdoor recreation access route changes in level more than 1 inch in highly developed and moderately developed settings or more than 2 inches in minimally developed settings, it must be accomplished by means of a curb ramp, graded surface, elevator, or platform lift. Although elevators and platform lifts are generally not part of the outdoor recreation environment, they are sometimes found in recreation sites in highly developed (urban/rural) settings. If elevators or platform lifts are used, designers should consult ADAAG 4.10 and 4.11. Stairs, steps, or escalators may be used in outdoor recreation areas, but are not considered accessible components of an outdoor recreation access route (ADAAG 3.5).

5.2.7 Gratings (ADAAG 4.5.4)

5.2.8 Surfacing (ADAAG 4.5.1). The surface of outdoor recreation access routes must be stable and firm. Soft, loose surfaces such as loose sand or gravel, wet clay, and irregular surfaces such as cobblestones, can significantly impede the movement of a wheelchair and create slipping and tripping hazards for people using other mobility aids.

In recreation settings, surface materials should be aesthetically appropriate and commensurate with user expectations. Concrete, asphalt, pavers set on concrete, well-maintained compacted crushed stone, and wood decking can meet these requirements. Other materials may also be used to achieve a stable and firm surface. Departures from this guideline by the use of other materials, designs, or technologies are permitted where the alternative materials, designs, and technologies will provide substantially equivalent or greater access and usability. For example, fibrous material held together with an appropriate binder and placed over a properly prepared and compacted substrate, may suffice under certain conditions. Guidelines may vary depending on local conditions and construction practices.

Wood decking may be used as a surfacing material, but planks must run perpendicular to the direction of travel and joints must be no more than 1/2 inch (13 mm). Consideration should be given to the maximum expected shrinkage to ensure that the resulting gap between planks is 1/2 inch maximum. Planks must be securely fastened so they do not warp and should be treated with an appropriate preservative to avoid decay and drying. Wood may not be slip-resistant when wet.

5.2.9 Vertical Clearance (ADAAG 4.4.2)

5.2.10 Protruding Objects (ADAAG 4.4.1)

5.3 CURB RAMPS (ADAAG 4.7)

5.3.1 Location (ADAAG 4.7.1). Curb ramps must be provided wherever an outdoor recreation access route crosses a curb.

5.3.2 Clear Width (ADAAG 4.7.3)

5.3.3 Slope (ADAAG 4.7.2). All ramps must be designed with the least possible slope. The maximum slope allowed depends on the space available.

1. New Construction and Existing Sites With Adequate Space. In new construction and in existing sites where space allows, the maximum slope shall be 1:12 (8.33 percent).

2. Existing Sites With Limited Space. Ramps that are constructed on existing sites or in existing buildings where space limitations prohibit the use of a 1:12 slope or less may have slopes and rises as follows:

a. A slope between 1:10 (10 percent) and 1:12 (8.33 percent) is allowed for a maximum rise of 6 inches;

b. A slope between 1:8 (12.5 percent) and 1:10 (10 percent) is allowed for a maximum rise of 3 inches.

3. Maximum Slope. No slope may be steeper than 1:8 (12.5 percent).

4. Transitions From Curb Ramps to Adjacent Surfaces. Transitions from curb ramps to walks, gutters, or streets shall be flush and free of abrupt changes. The maximum slopes of adjoining gutters, road surfaces immediately adjacent to the curb ramp, and accessible routes shall not exceed 1:20 (5 percent).

5.3.4 Surfacing (ADAAG 4.7.4). The surfacing of curb ramps must be stable, firm, and slip-resistant.

5.3.5 Sides of Recessed Curb Ramps (ADAAG 4.7.5)

5.3.6 Built-up Curb Ramps (ADAAG 4.7.6)

5.3.7 Protection from Obstruction (ADAAG 4.7.8)

5.3.8 Curb Ramps at Marked Crossings (ADAAG 4.7.9)

5.3.9 Diagonal Curb Ramps (ADAAG 4.7.10)

5.3.10 Raised Islands in Crossings (ADAAG 4.7.11)

5.4 MAXIMUM GRADE IN LIEU OF RAMPS

Rationale: To provide access between different levels in outdoor recreation settings, some segments of outdoor recreation access routes will need to exceed the running slope standards presented in section 5.2.2. In the built environment, these path segments would be designed to meet the design standards for ramps (ADAAG 4.8). However, in the outdoor recreation environment where highly developed ramps are usually inappropriate, these path segments are termed "maximum grade" areas and should be designed according to the following requirements.

5.4.1 Clear Width. Maximum grade segments on outdoor recreation access routes must maintain a minimum clear width of at least 48 inches (1220 mm) in highly developed (urban/rural) settings and 36 inches (916 mm) in moderately (natural), and minimally developed (back country) settings.

5.4.2 Slope and Rise (ADAAG 4.8.2). All segments of outdoor recreation access routes must be designed with the least possible slope. The maximum allowable slope and rise varies by recreation setting:

Degree of Access	Maximum Grade Allowed	For a Maximum Distance of:
easier	8.3 percent	30 feet
moderate	10 percent	50 feet
difficult	10 percent	50 feet

*Note: No more than 20% of the total length of the outdoor recreation access route shall meet the maximum grade criteria.

5.4.3 Cross Slope (ADAAG 4.8.6). Cross slope can make a maximum grade segment of a path nearly impossible to navigate for many people who use wheelchairs. The cross slope on maximum grade segments should never exceed 3 percent. When an outdoor recreation access route has a switch back or dogleg, any cross slope (not to exceed 3 percent) should be toward the change in direction.

5.4.4 Surface of Maximum Grade Segments (ADAAG 4.5.2). All segments of outdoor recreation access routes, including maximum grade segments, must meet the requirements for small level changes (5.2.6), gratings, (5.2.7) and surfacing materials (5.2.8).

5.4.5 Landings (ADAAG 4.8.4). Landings provide important rest spaces and are required at the top and bottom of each maximum grade segment and at points where maximum grade segments change direction. Each landing must meet the following specifications:

1. Standard Dimensions. The landing must be at least 60 inches (1525 mm) long, with no obstructions, and as wide as the path segment leading to it. Slope shall not exceed 3% in any direction.

2. Dimensions of Landings at Changes in Direction. If the path changes direction at the landing between two maximum grade segments, the landing must be at least 60 inches by 60 inches (1525 mm by 1525 mm).

5.4.6 Handrails (ADAAG 4.8.5). In highly developed (urban/rural) settings, moderately developed (natural) and minimally developed (back country) settings, hand rails are not required, but should be considered if conditions warrant. Furthermore, the need for handrails must be determined by site designers and managers based upon the site's level of modification, customer expectations, and natural features (see Section 1, "Integrating Accessibility into the Outdoor Recreation Environment"). Handrails are provided to assist with balance and support in accordance with performance standards. In situations where safety is the primary concern, guardrails should be provided. If only one handrail is provided, it should be placed on the downslope side. Access to major structures, such as visitor centers and office complexes, should be provided by access routes that meet ADAAG 4.3 requirements.

1. Location. (ADAAG 4.8.5)
2. Railing Size. (ADAAG 4.8.5)
3. Distance from Adjacent Surface. (ADAAG 4.8.5)
4. Gripping Surface. (ADAAG 4.8.5)
5. Handrail Materials. (ADAAG 4.8.5)
6. Mounting Height. (ADAAG 4.8.5)
7. Extensions. (ADAAG 4.8.5)
8. Handrail Ends. (ADAAG 4.8.5)
9. Rotation. (ADAAG 4.8.5)
10. Structural Strength. (ADAAG 4.8.5)

5.4.7 Edge Protection (ADAAG 4.8.7). All maximum grade path segments and landings must include protection from drop-offs at the path edges. This can be accomplished with walls, curbs, or railings that provide a suitable barrier at the edge of the path surface, such as a continuous rail immediately above the ground. Curbs must be 4 inches (102 mm) minimum high. Alternatively, the path surface may be widened to extend at least one foot past the handrails on each side.

Edge protection from drop-offs should be provided in all recreation settings. The materials used to construct edge protection should be commensurate with the setting and level of development. Concrete, asphalt, brick, cut stone, boulders, dimensional lumber, logs, and native earth may all be adequate and appropriate if constructed properly.

5.4.8 Drainage (ADAAG 4.8.8)

5.5 GATES, DOORS, AND OTHER ENTRYWAYS (ADAAG 4.13)

All gates, doors, and similar entryways that are part of an outdoor recreation access route must meet the following specifications.

5.5.1 Clear Width (ADAAG 4.13.5)

5.5.2 Clear Area (ADAAG 4.13.6)

5.5.3 Thresholds (ADAAG 4.13.8)

5.5.4 Gate and Door Hardware (ADAAG 4.13.9)

5.5.5 Closures (ADAAG 4.13.10)

5.5.6 Opening Force (ADAAG 4.13.11)

5.5.7 Double-leaf Gates and Doors (ADAAG 4.13.4)

5.5.8 Revolving Doors and Turnstiles (ADAAG 4.13.2)

5.5.9 Doors or Gates in a Series (ADAAG 4.13.7)

5.5.10 Automatic and Power-Assisted Doors and Gates (ADAAG 4.13.12)

5.6 STAIRS (ADAAG 4.9)

Stairs can be useful to many people. When provided in highly developed (urban/rural) settings, stairs in highly developed outdoor recreation settings must comply with the following standards. (Stairs are not considered accessible components of an outdoor recreation access route.)

5.6.1 Nosings (ADAAG 4.9.3)

5.6.2 Drainage (ADAAG 4.9.6)

5.6.3 Treads and Risers (ADAAG 4.9.2). On any given flight of stairs, all steps must have uniform riser heights and uniform tread widths. Stair treads must be no less than 11 inches (280 mm) wide, measured from riser to riser.

5.6.4 Handrails (ADAAG 4.9.4). In highly developed (urban/rural) settings, handrails should be provided on all stair segments in accordance with the following specifications. In moderately developed (natural) and minimally developed (back country) settings, the need for handrails must be determined by site designers and managers based upon the level of site modification, customer expectations, and natural features (see "Integrating Accessibility into the Outdoor Recreation Environment," Section 1). Handrails are provided to assist with balance and support in accordance with performance standards. In situations where safety is the primary concern, guardrails should be provided. If only one handrail is provided, it should be placed on the downslope side.

1. Location. (ADAAG 4.9.4)
2. Railing Size. (ADAAG 4.9.4)
3. Distance from Adjacent Surface. (ADAAG 4.9.4)
4. Gripping Surface. (ADAAG 4.9.4)
5. Handrail Materials. (ADAAG 4.9.4)
6. Mounting Height. (ADAAG 4.9.4)
7. Extensions. (ADAAG 4.9.4)
8. Handrail Ends. (ADAAG 4.9.4)
9. Rotation. (ADAAG 4.9.4)
10. Structural Strength. (ADAAG 4.9.4)

5.7 GUARDRAILS, FENCES, AND OTHER SAFETY BARRIERS

Guardrails, fences, and other safety barriers are provided in hazardous areas to ensure the safety of visitors. They are not used to facilitate a particular function or activity, and should never be construed as substitutes for handrails, which are provided to assist users with balance and support. When balance and support are required, such as along maximum grades and stairs, the handrail guidelines in 5.4.6 and 5.6.4 should be applied.

5.7.1 Location. Guardrails, fences, and other safety barriers must be provided where commensurate with safety and risk management objectives across the spectrum of recreation opportunity settings.

5.7.2 Height. When provided in highly developed (urban/rural) settings, the height of guardrails, fences, and other safety barriers should be determined by their function. In areas where safety is a primary concern, such as in congested areas near drop-offs, the top of the guardrail, fence, or safety barrier should be 42 inches (1066 mm) or higher above the ground. When such height might interfere with the recreation experience and is not necessitated by safety concerns, such as at a scenic overlook or fishing facility, the top of the guardrail, fence, or safety barrier may be lowered to 32 inches (813 mm) above the ground.

5.7.3 Vertical Members. Vertical members should be provided on guardrails, fences, and other safety barriers in highly developed (urban/rural) settings and in other developed settings as warranted by safety considerations and the requirements of the recreation activity. Where safety is the primary concern, vertical members should be designed and spaced to prevent the free passage of a 4-inch (153 mm) sphere.

5.7.4 Materials. All guardrails, fences, safety barriers, and any walls or other surfaces adjacent to them must be free of sharp edges, burrs, and other abrasive elements. Edges must have a minimum radius of 1/8 inch (3.2 mm). The materials used to construct guardrails, fences, and other safety barriers

may vary considerably and should be commensurate with the recreation setting.

5.7.5 Structural Strength. Guardrails, fences, and other safety barriers and mounting devices must meet the structural strength requirements of the Uniform Building Code.

5.7.6 Rotation (ADAAG 4.26.3). The bars of guardrails, fences, and other safety barriers must not rotate in their fittings.

5.8 SIGNS (ADAAG 4.30)

5.8.1 Symbols of Accessibility (ADAAG 4.30.7). The following symbols must be posted as required to identify accessible site elements:

1. International Symbol of Accessibility. This symbol must be posted at accessible parking spaces, accessible loading zones, accessible site and facility entrances that are not the primary entrance, and accessible restrooms. The color, materials, and overall size of the sign and symbol should be selected to blend with the sites natural setting, as long as the selection does not conflict with the other design standards presented in this section.

2. Universal Design Symbols. Signs should provide adequate information and detail on site-specific features and design dimensions such that individuals can determine whether or not the route or element is accessible to them and that it meets their recreation expectations. Universal Design Symbols do not replace the International Symbol of Accessibility in the four areas where it is required to be posted.

5.8.2 Signs on Outdoor Recreation Access Routes: The Universal Design Symbols. Signs on paths must inform visitors of site conditions related to accessibility. The level of accessibility for each path should be identified using the Universal Design Symbols.

Use of the Universal Design Symbols is preferred to the International Symbol of Accessibility because of the meanings attached to each. The International Symbol of Accessibility is seen by many as meaning "reserved for people with disabilities." The Universal Design Symbols, on the other hand, do not reserve sites or facilities for use by certain individuals. Rather, they provide visitors with specific criteria from which informed decisions with regard to participation can be made.

To support public education and safety, the universal design symbols must be used consistently. All signs in urban/rural and roaded natural settings must be designed in accordance with the guidelines, and all paths must be identified according to the degree of access to which they were designed (based on the guidelines presented herein). In addition, to help people better understand the levels of accessibility system and the meaning of the universal design symbols and signs, more in-depth information and other site-specific details should be provided in displays, brochures, and maps at information nodes or kiosks, trailheads, and entrance stations.

5.8.3 Trail Difficulty Rating System.

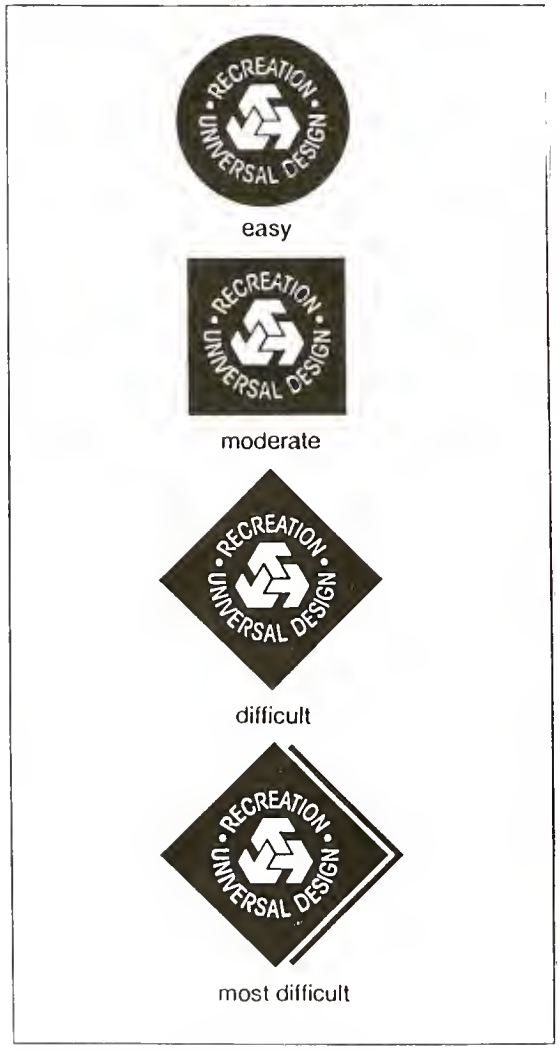
Rationale: Different groups will use trails for different purposes at different times throughout the year. Qualitative measures such as easier, moderate, difficult, and most difficult will vary according to the type of use (pedestrian, snowmobile, equestrian, etc.), the functional abilities of the user (age, ability to walk, stamina, etc.), the season of use, and weather conditions. For the four attributes of grade, cross slope, width, and surface, average and minimum/maximum values shall be posted. This will allow individuals to decide for themselves if they have the ability and interest to continue. Individuals can determine when trails are within their range of ability and interest if they have accurate and complete information on trail conditions and characteristics. This information is particularly important for enhancing accessibility in minimally developed (back country) settings and settings with no development (primitive settings).

• Inventory and Assessment. Data related to trail conditions must be inventoried based on objective, quantifiable measures and presented in clear, concise terms. Information should be collected on the average and the minimum or maximum value of four attributes: grade, cross-slope, width, and surface. The trails total distance and change in elevation should also be documented, as should any obstacles and their magnitude (e.g., steps, roots, ruts,

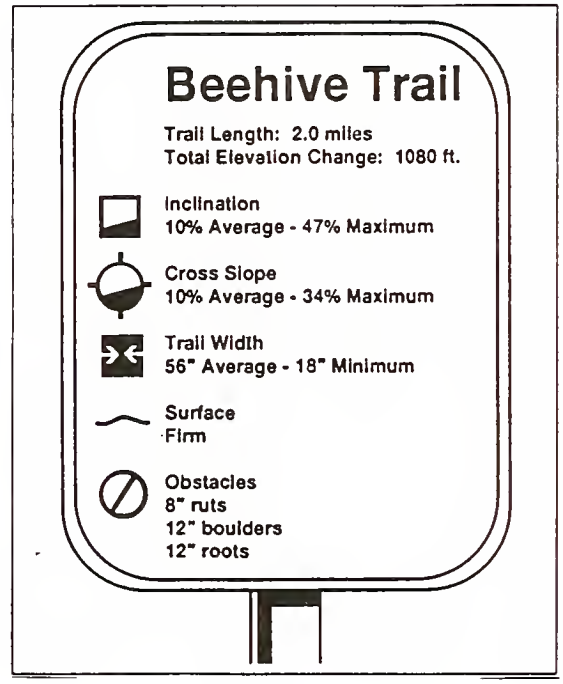
embedded rocks, vertical obstructions, and water crossings).

• Mapping and Signing. Data on trail attributes and features should include: average and maximum grade, maximum cross slope, minimum trail width, type of surface and magnitudes of obstacles, such as rocks, roots, and ruts. This information should be posted at information areas and trailheads and provided in trail guides, maps, and brochures. In addition, a route map and grade profile should be provided when possible.

To further assist a user in determining the appropriateness of a particular trail, maps should identify the locations of the minimum trail width and maximum values for grade and cross-slope. If the most demanding trail attributes occur at the end of the trail or in a particular direction on a loop trail, users with limited mobility or endurance can use this information to determine the direction and distance they wish to travel.



The Universal Design Symbols.



5.9 DETERMINING DEGREE OF ACCESS; OUTDOOR RECREATION ACCESS ROUTES

The following discussion presents two alternative approaches for incorporating accessibility into the design of an outdoor recreation access route. The first method, beginning with Alternative A, presents a two step process for determining the highest degree of access practicable and feasible based upon five criteria: recreation setting, condition of the natural environment, amount of structural modification, recreation experience, and consultation with people with disabilities. The second method, Alternative B, allows for variations in the degree of access through exceptions that are based on mitigating or minimizing unacceptable impacts to the natural, historic, cultural, or religious environment. The technical/design specifications and recommendations presented in 5.1-5.8 are applicable to both methods. The approaches differ in how the highest degree of access practicable and feasible is determined.

5.9.1 ALTERNATIVE A:

I. Applicability

A. General Rule. All newly constructed outdoor recreation sites and facilities shall include Outdoor Recreation Access Route(s) complying with Section 5.0. The Outdoor Recreation Access Route shall provide the highest degree of access practicable and feasible between and among the primary elements and spaces of an outdoor recreation site, area or facility. Determination of "highest degree of access practicable and feasible" shall be based on a consideration of the following factors:

1. Recreation Setting;

2. Conditions of the Natural Environment;

3. Amount of Structural Modification to the Recreation Site, Area or Facility;

4. Recreation Experience (e.g. nature preserve, rock-climbing, developed camping/picnicking);

5. Consultation with Interested Persons.

B. Definition. An Outdoor Recreation Access Route is a path that connects the primary accessible elements and spaces of a recreation site, including accessible parking spaces and site entrances. They are typically short, usually a 1/4 mile or less in length.

EXCEPTION: Paths that provide access to major structures, such as visitor centers and office complexes, shall be provided by access routes that meet requirements specified in ADAAG 4.3.

II. Procedure

The "highest degree of access practicable and feasible" is determined through a two-step process. The first step requires establishing the initial degree of access by identifying the recreation setting, analyzing the natural features, evaluating the amount of structural modification, describing the expected or desired recreation experience at a recreation site or facility, and consulting with interested persons with disabilities throughout the entire planning/design process. The second step requires confirming the initial assessment of the degree of access for feasibility and practicability using a series of exceptions.

A. Initial Assessment of Highest Degree of Access

1. Recreation Setting. This factor is closely related to the amount of structural modification (see II(a)(3)), but focuses on the environs within which the recreation activity, site or facility is located. The recreation setting is defined to be urban/rural, natural, back-country or primitive.

• URBAN/RURAL RECREATION SETTINGS are characterized by substantially urbanized and modified natural environments. Although sites may still appear natural, vegetation is often manicured. Sights and sounds of humans on-site are predominant. Large numbers of visitors can be expected, both on-site and in nearby areas. Facilities for highly intensive motor vehicle use, parking, and mass transit are often available. There is greater emphasis on user comfort, convenience, safety and accessibility, and lesser emphasis on the natural environment.

• NATURAL RECREATION SETTINGS are characterized by natural appearing environments with moderate evidence of human activity. Interaction between users will be low to moderate. Resource modification and utilization practices are evident but harmonious with the natural environment. Conventional motor vehicle use is accommodated. Natural settings are less developed than urban/rural settings and place a greater emphasis on the natural environment.

• BACK-COUNTRY (SEMI-PRIMITIVE) RECREATION SETTINGS are characterized by a predominantly natural-appearing environment of moderate to large size. Interaction between visitors is low, but there is often evidence of others. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motor vehicle use may be prohibited at some sites. Back-country settings are rarely developed.

• PRIMITIVE RECREATION SETTINGS are typically characterized by pristine and rugged, unmodified environments of fairly large size. Interaction between users is very low, and evidence of others is minimal. The area is managed to be essentially free from developments and evidence of human-induced restrictions and controls. Motor vehicles are generally not permitted. Outdoor Recreation Access Routes are typically not provided in these settings.

NOTE: Wheelchairs are not included in this restriction. As stated in Section 507(c) of the ADA: "In general Congress reaffirms that nothing in the Wilderness Act is to be construed as prohibiting the use of a wheelchair in a wilderness area by an individual whose disability requires use of a wheelchair...the term wheelchair means a device designed solely for use by a mobility-impaired person for locomotion, that is suitable for use in an indoor pedestrian area."

2. Conditions of the Natural Environment (terrain, geologic and water features, vegetation). One of the primary reasons that people choose to participate in outdoor recreation activities versus recreation activities in the built environment is to enjoy the natural beauty and environmental features that outdoor areas provide. Site modifications that threaten or destroy these features will compromise the reasons people want to recreate in them.

3. Amount of Structural Modification. Structural modification is described as high, moderate, minimal and no development. The degree of access at a recreation site or facility shall be consistent with the level of development at the site. As the degree of structural modification increases or decreases, so may the degree of access of the Outdoor Recreation Access Route(s) within the site, based on standard outdoor construction practices and use of natural or native materials. In all cases, built structures will comply with ADAAG.

• HIGH DEGREE OF STRUCTURAL MODIFICATION: Design of the recreation site or facility reflects a high consideration for visitor comfort, convenience and safety. Structural modifications and developments are evident and tend to dominate the landscape. Construction materials used in these settings reflect an urban character. Trails and roads are typically paved, with an asphalt, concrete, or similar hardened surface.

• MODERATE DEGREE OF STRUCTURAL MODIFICATION: Rustic facilities provide some comfort for the user as well as site protection. Native materials are used but with more refinement in design. Construction materials are more rustic; trails and roads may be paved, but are more likely constructed of natural-appearing surfaces such as compacted crushed gravel.

• MINIMAL DEGREE OF STRUCTURAL MODIFICATION: Rustic and rudimentary facilities are provided primarily for site protection. Modifications to the natural landscape are subordinate to the character of the natural environment. Construction materials used enhance the predominantly natural-appearing character of the setting. Road and trail surfacing, if provided, is typically natural, i.e. native soil; use of foreign or imported material such as crushed rock is rare.

• NO DEVELOPMENT: Modifications to the natural environment are primarily made for resource protection, not for user comfort. Roads are generally not provided. The surface of trails is natural and may present many rocks, downed logs, and other

naturally occurring obstacles. The guidelines presented in this report are generally not applicable to these undeveloped settings.

4. Recreation Experience. Once the recreation setting has been identified and the amount of structural modification has been evaluated, the next step in the process of determining the highest level of access practicable and feasible is to describe the expected recreation experience.

The recreation experience and recreation setting are closely related. Although exceptions or anomalies exist, the relationship can be generally characterized as follows:

• URBAN/RURAL or HIGHLY DEVELOPED SETTINGS: In these settings, visitors expect an environment that has a level of accessibility similar to facilities in urbanized areas, where they can participate independently in all activities. Recreation sites and opportunities are convenient. Experiencing natural environments, having challenges and risks afforded by the natural environment, and using outdoor skills are relatively unimportant.

• NATURAL or MODERATELY DEVELOPED SETTINGS: There is approximately equal probability of experiencing affiliation with other user groups and experiencing isolation from the sights and sounds of humans. Opportunities for a high degree of interaction with the environment are common. This setting offers more challenge and risk for recreationists, but less than what would be found in lesser developed settings. Practice and testing of outdoor skills may be important. There is a greater emphasis on the natural landscape and fewer developments and human-influenced amenities.

• BACK-COUNTRY (SEMI-PRIMITIVE) or MINIMALLY DEVELOPED SETTINGS: The recreation experience associated with these settings involves a moderately high probability of isolation from the sights and sounds of humans. The environment is natural appearing and the setting provides opportunities for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is very important since recreation opportunities often present a moderately high degree of challenge and risk.

• PRIMITIVE or UNDEVELOPED SETTINGS: There is an extremely high probability of experiencing isolation from the sights and sounds of humans in these settings. Opportunities abound for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is imperative. Recreation opportunities often present high degrees of challenge and risk with few to no human-influenced amenities. In these settings, preservation of the natural environment is the primary consideration.

5. Consultation with Interested Persons. Interested persons shall be invited to actively participate in the consultation process, including State or local accessibility officials, individuals with disabilities, and organizations representing individuals with disabilities. Furthermore, consumers and designers of accessible outdoor recreation site design and development shall actively participate in the process to determine the highest degree of access practicable and feasible. The consultation and participation of interested persons shall be documented and included in the project's public file.

B. Confirmation of the Initial Assessment of the Highest Degree of Access Using Series of Exceptions. Because of the nature of the outdoor recreation environment, modifications to achieve the initial assessment of the highest degree of access may change the fundamental nature of the recreation activity, experience or setting beyond acceptable limits. For this reason, the initial assessment of the degree of access of the recreation site or facility must be confirmed for practicability and feasibility within the specific context of the natural features associated with, surrounding, and adjacent to the site or facility.

1. Although the initial degree of access may be moderate or difficult, it will be appropriate in some instances (i.e. relatively flat or gently sloping terrain) to design the Outdoor Recreation Access Route(s) to a higher degree of access in all or part of a recreation site if so doing would not change the fundamental nature of the activity, setting, or experience in that portion of the site.

2. The initial assessment of the degree of access may be modified if:

a. Provision of the initial assessment of the degree of access of the Outdoor Recreation Access Route in all or part of a recreation site will threaten or destroy the historic significance of a site;

b. Provision of the initial assessment of the degree of access of the Outdoor Recreation Access Route in all or part of a recreation site will threaten or destroy the character of a site designed to emphasize a natural-appearing setting, where natural or natural-appearing materials are utilized;

c. Provision of the initial assessment of the degree of access of the Outdoor Recreation Access Route in all or part of a recreation site will threaten or destroy the character of a site designed to provide minimal structural modification in rugged, back country settings;

d. Provision of the initial assessment of the degree of access of the Outdoor Recreation Access Route in all or part of a recreation site will have such significant environmental impact as to threaten or destroy the unique natural, cultural or religious character of the setting.

3. Documentation. If the decision is made to modify the degree of access in all or part of a recreation site, that decision shall be documented and included in the project's public files. Decision documents shall include the names of the individuals on the planning and design team, design alternatives considered, the design solution, the decision official, and the concurrence of the reviewing officials.

4. Alternative Methods for Equal Participation. If modifying the initial assessment for the degree of access of the Outdoor Recreation Access Route(s) is approved for a portion of a developed recreation site, alternative methods will be used to ensure equal participation by all visitors in the diversity of recreation experiences offered at the recreation site.

C. Retrofitting Existing Recreation Areas, Sites and Facilities: Alternate Route. In instances in highly developed or moderately developed settings (e.g. altering existing sites where options are often limited, or at sites of extreme terrain), an alternate route may be provided in lieu of an Outdoor Recreation Access Route when:

1. Creating and/or maintaining such a route would threaten or destroy the historic, cultural, religious or environmental significance of the site or setting; or,

2. Provision of an Outdoor Recreation Access Route meeting the easier or moderate degree of access is not feasible because of steep terrain and/or where site modifications would result in undue burden because of site limitations.

At these sites, parking may be used as an alternative means of providing access to facilities that may otherwise be inaccessible. Parking should be provided adjacent to the facility(s), and an Outdoor Recreation Access Route meeting the easier or moderate degree of access should connect parking and the facility(s).

If it is determined that provision of an Outdoor Recreation Access Route is not feasible or practicable at existing developed sites because of steep terrain or site limitations, an Accessible Recreation Trail (Section 6.0) that complies with the easier or moderate degree of access may be used to access to the recreation site's primary elements and spaces.

NOTE: If Exception (2) is implemented, managers are required to ensure that alternative access or an Outdoor Recreation Access Route connects all the primary functions at the site.

D. Wilderness Areas. The designation of some undeveloped sites, such as a designated wilderness area under the Wilderness Act and semi-primitive and primitive land allocations, often may not allow the introduction of foreign materials or changes within the designated environment. In these sites, structural modifications are the exception and are only provided for resource protection.

If improvements are provided at points of public entry to these areas, an Outdoor Recreation Access Route that meets a difficult degree of access shall connect all elements and spaces if feasible given the environmental constraints (i.e. environmental laws, steep or rugged terrain, limited space, etc.) presented at the points of public entry.

5.9.2 ALTERNATIVE B:

1.0 Access routes that provide access to major structures, such as visitor centers and office complexes, shall meet the requirements specified in ADAAG 4.3. All newly developed outdoor recreation access routes shall comply with the standards for an outdoor recreation access route specified in 1.1.

1.1 An outdoor recreation access route shall meet the following minimum requirements:

1.1.1 The surface of outdoor recreation access routes shall be firm and stable.

1.1.2 The minimum clear width of an outdoor recreation access route shall be 48". Width may narrow to 32" for a maximum of 2'. If the outdoor recreation access route must pass through significant geological features or between aesthetically important vegetation, the clear width may reduce to 36" for a maximum distance of 10'.

1.1.3 If an outdoor recreation access route has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 200'. An intersection of two outdoor recreation access routes is an acceptable passing space.

1.1.4 RUNNING GRADE: The sustained running grade for an outdoor recreation access route should not exceed 5%. If this is not feasible because of steep terrain, segments of the trail may exceed 5% up to a maximum grade of 8%, for a maximum run of 30'. However, grades should not exceed 5% for more than 20% of the total trail length.

1.1.5 CROSS SLOPE: The cross slope for an outdoor recreation access route should be no greater than 3%.

1.1.6 The surface of an outdoor recreation access route may have vertical changes in level up to 1/2" in height without a beveled edge. Changes in level between 1/2" and 1" are allowed if a 1:2 beveled edge is provided. If the surface of an outdoor recreation access route changes in level more than 1", it must be accomplished by means of a curb ramp, an elevator, or a lift.

1.1.7 An outdoor recreation access route should provide rest areas at least 60" by 60" with fixed seating adjacent to the rest area, at reasonable intervals not to exceed 400'.

EXCEPTIONS: When structural modifications are provided in outdoor recreation sites, managers have an obligation to ensure that the outdoor recreation access routes connecting the site's primary functions are designed to the highest degree of access practicable and feasible. Because these routes access the site's basic elements and spaces, accessibility requirements are more stringent than are those for outdoor accessible recreation trails. Exceptions to complying with 1.1 are allowed only if modifications for accessibility would alter the character or experience the site is designed to provide beyond acceptable limits, as determined by the site's resource manager in consultation with people with disabilities.

1. When compliance with any of the standards in 1.1 will have such significant environmental impact as to threaten or destroy the unique natural, geologic, cultural or religious character of the site, the specific standard(s) in question, and only that standard(s) may be modified to meet the highest level of access practicable and feasible as defined in 1.2, 1.3 and 1.4. Documentation for the exception must include evidence that people with disabilities or their representatives were involved in the review process.

2. When it is determined in accordance with the procedures in ADAAG 4.1.7(2) that compliance with any of the standards in 1.1 would threaten or destroy the historic significance of a site, the specific standard(s) in question, and only that standard(s) may be modified to meet the highest degree of access practicable.

3. When it is determined not to be practicable and feasible to comply with any of the standards in 1.1 due to severe elevations of the route or environment, the specific standard(s) in question, and only that standard(s), may be modified to meet the highest level of access practicable and feasible as defined in 1.2, 1.3, and 1.4. Documentation for the exception

must include evidence that people with disabilities or their representatives were involved in the review process.

4. When the designation of a site, such as a designated wilderness area under the Wilderness Act, does not allow the introduction of foreign materials or changes within the designated environment, the standards of a most difficult (primitive) site apply.

5. Under 1.1 and 1.2 an alternative route may be provided in lieu of an Outdoor Recreation Access Route when:

a. Creating and/or maintaining such a route would threaten or destroy the historic, cultural, religious or environmental significance of the site or setting; or,

b. Provision of an outdoor recreation access route meeting the easier or moderate degree of access is not feasible because of the steep terrain and resultant changes to the fundamental nature of the recreation activity, experience or setting.

At these sites, parking may be used as an alternative means of providing access to facilities that may otherwise be inaccessible. Parking should be provided adjacent to the facility(s), and an outdoor recreation access route meeting 1.1 or 1.2 should connect parking and the facility(s). NOTE: If this exception is implemented, managers must still ensure that alternative access or an outdoor recreation access route connects all the primary functions at the site.

1.2 A moderate outdoor recreation access route shall meet the following minimum requirements:

1.2.1 The surface of a moderate outdoor recreation access route shall be firm and stable.

1.2.2 The minimum clear width of a moderate outdoor recreation access route shall be 36".

1.2.3 If a moderate outdoor recreation access route has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 300'. An intersection of two outdoor recreation access routes is an acceptable passing space.

1.2.4 RUNNING GRADE. The sustained running grade for a moderate outdoor recreation access route should not exceed 5%. If this is not feasible because of steep terrain, segments of the trail may exceed 5% up to a maximum grade of 10% for a maximum run of 50'. However, a minimum of 80% of the total trail length should not exceed the 5% sustained running slope criteria; grades should not exceed 5% for more than 20% of the total trail length.

1.2.5 CROSS SLOPE. The cross slope for a moderate outdoor recreation access route should not exceed 3%.

1.2.6 The surface of an outdoor recreation access route may have vertical changes in level up to 1/2" in height without a beveled edge. Changes in level between 1/2" and 1" are allowed if a 1:2 beveled edge is provided. If the surface of an outdoor recreation access route changes in level more than 1", it must be accomplished by means of a curb ramp, an elevator, or a lift.

1.2.7 Moderate outdoor recreation access routes should provide rest areas at least 60" by 60" with fixed seating adjacent to the rest area, at reasonable intervals not to exceed 900'.

1.3 A difficult outdoor recreation access route shall meet the following minimum requirements:

1.3.1 The surface of a difficult outdoor recreation access route shall be firm and stable.

1.3.2 The minimum clear width of a difficult outdoor recreation access route shall be 36".

1.3.3 If a difficult outdoor recreation access route has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 400'. An intersection of two outdoor recreation access routes is an acceptable passing space.

1.3.4 RUNNING GRADE. The sustained running grade for a difficult outdoor recreation access route should not exceed 8%. If this is not feasible because of steep terrain, segments of the trail may exceed 8% up to a maximum grade of 10% for a maximum run of 50'. However, a minimum of 80% of the total trail

length should not exceed the 8% sustained running grade criteria; grades should not exceed 8% for more than 20% of the total trail length.

1.3.5 CROSS SLOPE. The cross slope for a difficult outdoor recreation access route should not exceed 3%.

1.3.6 The surface of an outdoor recreation access route may have vertical changes in level up to 1" in height without a beveled edge. Changes in level between 1" and 2" are allowed if a 1:2 beveled edge is provided. If the surface of an outdoor recreation access route changes in level more than 2", it must be accomplished by means of a curb ramp, an elevator, or a lift.

1.3.7 Difficult outdoor recreation access routes should provide rest areas at least 60" by 60" with fixed seating adjacent to the rest area, at reasonable intervals not to exceed 1200'.

1.4 There are no minimum requirements for a most difficult outdoor recreation access route.

6.0 RECREATION TRAILS

6.1 IDENTIFYING RECREATION TRAILS; GENERAL OVERVIEW AND RATIONALE

Essentially, all developed paths in a recreation site that are not outdoor recreation access routes are recreation trails.

Recreation trails are generally longer in distance than outdoor recreation access routes, typically 1/4-mile or longer. They provide access to recreation activities that are not among the primary elements and spaces of sites. Often, recreation trails are considered a recreation activity in and of themselves (i.e., a hiking trail). Recreation activities served by a recreation trail might include scenic overlooks, interpretive sites, fishing platforms, or the out-of-doors. Recreation trails can be further subdivided, drawing a distinction between shorter, more developed trails such as a trail connecting a trailhead, visitor center, or parking area with a recreation activity and longer, less developed trails where hiking in the natural outdoors is the activity being sought. In the first group of trails, accessibility is a more important consideration commensurate with the recreation setting. In the second group of trails, the recreation experience and natural environment are the most important considerations and modifications solely for accessibility would be inappropriate. Two alternative methods of determining degree of access are presented in 6.7.

6.2 NUMBER AND LOCATION OF ACCESSIBLE RECREATION TRAILS

To the maximum extent feasible, the accessible recreation trail must coincide with the route for the general public. At a minimum, accessible recreation trails must be designed to provide the expected degree of access given the recreation setting of the site:

Recreation Setting	Degree of Access
urban/rural	easier
natural	moderate
back country	difficult
primitive	most difficult

Recreation trails that are designed and managed exclusively for non pedestrian use, such as routes for four-wheel drives and all terrain vehicles or equestrian-only trails, are exempt from accessibility requirements. However, such trails should be designed and constructed according to approved and accepted engineering standards in response to risk and safety considerations. In addition, if parking areas, restrooms, or similar facilities are associated with such recreation trails, they must be accessible.

Dual-purpose trails, such as a vehicular road that is also intended for pedestrian use, must provide the degree of access associated with the sites level of development to the maximum extent feasible, (high, moderate, minimal) commensurate with the recreation setting.

6.3 DESIGN OF RECREATION TRAILS

The accessibility guidelines for recreation trails should be considered in highly developed (urban/rural), moderately developed (natural), and minimally developed (back country) settings. These guidelines are less stringent than the guidelines for

outdoor recreation access routes because recreation trails typically provide access to lesser-developed areas of a site, where natural features are to be emphasized along with customer expectations and the level of development when determining accessibility modifications.

Designers and managers must carefully identify the needs for both outdoor recreation access routes and accessible recreation trails in every site.

Summary of Design Standards for Recreation Trails

	Easier (urban/rural)	Moderate (natural)	Difficult (back country)
• clear width (minimum):	48 inches	36 inches	28 inches
• sustained running grade* (maximum):	5 percent	8 percent	12 percent
• maximum grade allowed:***	10 percent	14 percent	20 percent
for a maximum distance of:	30 feet	50 feet	50 feet
• cross slope** (maximum):***	3 percent	5 percent	8 percent
• passing space interval (maximum):	200 feet	300 feet	400 feet
• rest area interval (maximum):	400 feet	900 feet	1200 feet

*Note: No more than 20% of the total trail length shall exceed the sustained running grade.
**Note: Cross slope may not exceed 3% in maximum grade segments, or 5% in maximum grade segments on difficult access trails.
***Note: The measurement of maximum grade and cross slope should be made over a 24" measurement interval to correspond to the footprint of a wheelchair operating in that environment.

6.3.1 Clear Width. The required minimum clear width for a recreation trail varies based on the expected degree of access for each recreation setting:

Degree of Access	Recreation Setting	Required Minimum Clear Width
easier	highly developed (urban/rural)	48 inches (1220 mm)
moderate	moderately developed (natural	36 inches (915 mm)
difficult	minimally developed (back country)	28 inches (915 mm)
most difficult	no development (primitive)	not applicable

In highly developed (urban/rural) and moderately developed (roaded natural) settings, the clear width may reduce to 32 inches (815 mm) for a reasonable distance, as listed below, if the trail must pass through significant geological features (e.g., rock formations) or between aesthetically important vegetation (e.g., large trees).

	Highly Developed (urban/rural)	Moderately Developed (natural
Maximum distance allowed for 32 inch clear width:	10 feet	30 feet

Trailway structures (i.e., bridges and puncheons) shall be built to the same specifications as the trail width.

In the rare situation in which a recreation trail is required or provided at recreation settings without development (primitive recreation settings), designers should apply the guidelines for minimally developed (back country) settings.

6.3.2 Sustained Running Grade. All recreation trails should be designed to provide the most gentle slope possible within the constraints of the natural environment.

The maximum sustained running grade allowed for recreation trails in each recreation setting is shown in the following chart. If a segment of a recreation trail has a steeper slope than these allowed maximums, it must be designed according to the guidelines in section 5.4, Maximum Grade.

Degree of Access	Recreation Setting	Maximum Grade
easier	highly developed (urban/rural)	1:20 (5 percent)
moderate	moderately developed (natural)	1:12 (8 percent)
difficult	minimally developed (back country)	1:8 (12 percent)
most difficult	no development (primitive)	not applicable
*Note: No more than 20% of the total trail length shall exceed the sustained running grade.		

6.3.3 Cross Slope. Cross slope can make a pathway difficult to navigate for a person using a wheelchair or other mobility aid. Although some cross slope is desired to prevent water accumulation on the path surface, the cross slope of recreation trails should never exceed 3 percent (1:33) in highly developed (urban/rural) settings, 5 percent (1:20) in moderately developed (natural) settings, and 8.33 percent (1:12) in minimally developed (back country) settings. These percentages are to be viewed as extremes and only considered when environmental constraint, i.e. rugged terrain, dictate.

*Note: Cross slope may not exceed 3% in maximum grade segments on moderate access trails or 5% in maximum grade segments on difficult access trails.

Rationale: Construction equipment and materials used in the outdoor environment typically differ from those used in the built environment. Because of

this, tight specifications of a 2% slope, as cited in ADAAG, are often difficult to achieve.

6.3.4 Passing Space. If a recreation trail has less than 60 inches (1525 mm) of clear width, passing spaces must be provided at reasonable intervals not to exceed the distances shown below. Each passing space must be at least 60 inches by 60 inches (1525 mm by 1525 mm). A T-intersection of two trails is also an acceptable passing space. Designers are encouraged to use natural topographic features to provide passing spaces in recreation settings.

Degree of Access	Recreation Setting	Interval of Passing Spaces
easier	highly developed (urban/rural)	200 feet (61 m) max.
moderate	moderately developed	300 feet (91.5 m) max.
difficult	minimally developed	400 feet (122 m) max.
most difficult	no development (primitive)	not generally applicable

A recreation trail with a clear width of 60 inches (1525 mm) allows the passage of two wheelchairs and eliminates the need for passing spaces. However, 60-inch (1525 mm) wide trails may not be appropriate in all recreation settings. The decision to construct a 60-inch (1525 mm) wide trail should be commensurate with recreation setting considerations and expectations of degree of access.

6.3.5 Rest Areas at Passing Spaces. Passing spaces can provide valuable rest areas for all people. In highly developed (urban/rural) settings, benches and other types of fixed seating should be provided adjacent to passing spaces as a matter of convenience and accommodation and should be accessible. On recreation trails, rest areas at passing spaces should be provided at passing spaces at reasonable intervals:

Degree of Access	Recreation Setting	Interval of Rest Areas
easier	highly developed (urban/rural)	min. every other passing space
moderate	moderately developed (natural)	min. every third passing space
difficult	minimally developed (back country)	min. every third passing space
most difficult	no development (primitive)	not applicable

6.3.6 Small Level Changes. Recreation trails may have small vertical changes in surface level if such changes do not create barriers to accessibility, given the expected degree of access associated with the setting. The following vertical changes in level are allowed in each recreation setting if beveled with a slope no greater than 1:2.

Degree of Access	Recreation Setting	Maximum Level Change (with bevel of 1:2)
easier	highly developed (urban/rural)	1 inch (13 mm)
moderate	moderately developed (natural)	2 inches (26 mm)
difficult	minimally developed (back country)	3 inches (52 mm)
most difficult	no development (primitive)	not applicable

If the surface of a recreation trail changes in level more than these allowed maximums, such change must be accomplished by means of a graded surface. Stairs or steps are not considered accessible components of an accessible recreation trail.

6.3.7 Gratings (ADAAG 4.5.4). If gratings are located in the walking surface, they must have spaces no greater than 1/2-inch (13 mm) wide in one direction. If gratings have elongated openings, they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

6.3.8 Surfacing. The surfacing guidelines for recreation trails are the same as the surfacing guidelines for outdoor recreation access routes. Please refer to guideline 5.3.8.

6.3.9 Cattle Guards. Although accessibility guidelines are not yet available regarding the use of cattle guards in outdoor recreation settings, designers and managers of recreation settings are encouraged to use their best judgment in ensuring that the use of cattle guards do not create an undue barrier to accessibility on recreation trails.

6.3.10 Cross-drains and Water Bars. Like cattle guards, accessibility guidelines are not yet available regarding the use of cross-drains and water bars in outdoor recreation settings. Designers and managers of recreation settings are encouraged to use their best judgment in ensuring that the use of cross-drains or water bars does not create an undue barrier to accessibility on recreation trails.

6.3.11 Vertical Clearance (ADAAG 4.4.2). All recreation trails must have clear head room of at least 80 inches (2030 mm). If vertical clearance of an area adjoining a trail is reduced to less than 80 inches (2030 mm), a barrier must be provided to warn people with limited vision.

6.3.12 Protruding Objects (ADAAG 4.4.1). Guidelines for protruding objects on recreation trails are the same as the guidelines for protruding objects on outdoor recreation access routes. See guideline 5.2.10.

6.4 MAXIMUM GRADE IN LIEU OF RAMPS

Rationale: To provide access between different levels in outdoor recreation settings, some segments of recreation trails will need to exceed the running grade standards presented in section 5.2. In the built environment, these path segments would be designed to meet the design standards for ramps (ADAAG 4.8). However, in the outdoor recreation environment where highly developed ramps are usually inappropriate, these path segments are termed "maximum grade" areas and should be designed according to the following guidelines.

6.4.1 Clear Width. Maximum grade segments on recreation trails must maintain a clear width of at least 48 inches (1220 mm) in highly developed (urban/rural) settings, 36 inches (916 mm) in moderately developed (natural) settings, and 28 inches (710 mm) in minimally developed (back country) settings.

6.4.2 Slope and Rise (ADAAG 4.8.2). All segments of recreation trails must be designed with the least possible slope. The maximum slope and rise of maximum grade segments depends on the expected degree of access:

Degree of Access	Maximum Slope	For Distance Not to Exceed
easier	10 percent	30 feet
moderate	14 percent	50 feet
difficult	20 percent	50 feet
most difficult	not applicable	not applicable

Note: These percentages are to be viewed as extremes and only considered when environmental constraint, i.e. rugged terrain, dictate.

6.4.3 Cross Slope (ADAAG 4.8.6). Cross slope can make a maximum grade segment of a path nearly impossible to navigate for many people who use wheelchairs. The cross slope on maximum grade segments must not exceed the following guidelines:

Degree of Access	Maximum Cross Slope
easier	3 percent
moderate	5 percent
difficult	8 percent
most difficult	not applicable

6.4.4 Landings (ADAAG 4.8.4). Landings provide important rest spaces and are required at the top and bottom of each maximum grade segment and at points where maximum grade segments change direction. Each landing must meet the following specifications:

1. Standard Dimensions. The landing must be at least 60 inches (1525 mm) long, with no obstructions, and as wide as the path segment leading to it.

2. Dimensions of Landings at Changes in Direction. If the path changes direction at the landing between two maximum grade segments, the landing must be at least 60 inches by 60 inches (1525 mm by 1525 mm).

6.4.5 Edge Protection/Safety Rails (ADAAG 4.8.7). Protection from drop-offs at the edges of maximum grade segments should be provided commensurate with safety concerns and site conditions. This can be accomplished with walls, curbs, or safety rails that provide a suitable barrier at the edge of the path surface, such as a continuous rail immediately above the ground. Curbs must be 4 inches (102 mm) minimum high. Alternatively, the path surface may be widened to extend at least one foot past the handrails on each side.

Edge protection from drop-offs should be provided in developed settings. The materials used to construct edge protection should be commensurate with the recreation setting and level of development. Concrete, asphalt, brick, cut stone, boulders, dimensional lumber, logs, and native earth may all be adequate and appropriate if constructed properly.

6.4.6 Drainage (ADAAG 4.8.8)

6.5 GATES AND ENTRY POINTS

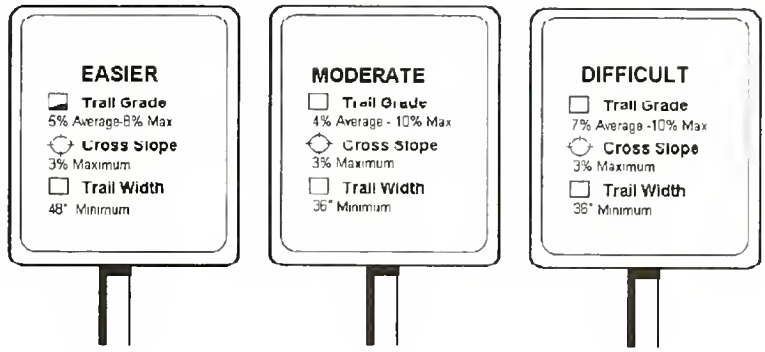
Guidelines for gates and entry points on recreation trails are the same as the applicable guidelines for doors and gates on accessible outdoor recreation access routes. See guideline 5.6, Gates, Doors, and Other Entryways.

Two design challenges that may be encountered when designing recreation trails are animal guard entrances and tank traps or similar vehicle barriers. Accessibility guidelines are not yet available to provide guidance in addressing these elements. Designers and managers of recreation settings are encouraged to use their best judgment in ensuring that animal guard entrances and tank traps or other vehicle barriers do not create undue barriers to accessibility on recreation trails.

6.6 SIGNS

Guidelines for signs on recreation trails are the same as the guidelines for signs on outdoor recreation access routes (see section 5.8), with the following addition regarding trailhead information. Guidelines for the design of interpretive signs on recreation trails are being developed but are not yet available.

6.6.1 Trailhead Information. Data on trail attributes and features should be posted at information areas and trailheads to assist all trail users in determining the extent to which the trail is within their range of ability and interest. At a minimum, posted data should include the trail's average and maximum slope, cross slope, and width. When possible, a route map and grade profile should also be provided. Trailhead information signs can also be useful in lesser developed settings where the trails are not designed to the guidelines presented in this section. The signs below illustrate how this information could be displayed.



6.7 DETERMINING DEGREE OF ACCESS; RECREATION TRAILS

The following discussion presents two alternative approaches for incorporating accessibility into the design of recreation trails. The first method, beginning with Alternative A, presents a two step process for determining the highest degree of access practicable and feasible based upon five criteria: recreation setting, condition of the natural environment, amount of structural modification, recreation experience, and consultation with people with disabilities. The second method, Alternative B, allows for variations in the degree of access through exceptions that are based on mitigating or minimizing unacceptable impacts to the natural, historic, cultural, or religious environment. The technical/design specifications and recommendations presented in 6.1-6.6 are applicable to both methods. The approaches differ in how the highest degree of access practicable and feasible is determined.

6.7.1 ALTERNATIVE A:

I. Applicability

A. General Rule. Whenever an accessible recreation trail is provided, it shall be designed to the highest degree of access practicable and feasible as specified in Section 6.0. Determination of "highest degree of access practicable and feasible" shall be based on a consideration of the following factors:

1. Recreation Setting;

2. Conditions of the Natural Environment;

3. Amount of Structural Modification to the Recreation Site, Area or Facility;

4. Desired/Expected Recreation Experience (i.e. relaxed nature walk, rock-climbing, rugged/challenging/strenuous hike, etc.)

5. Consultation with Interested Persons.

B. Definition. A recreation trail is a path that provides access to lesser-developed areas of a recreation setting or to recreation activities that are not among a recreation site's primary elements and spaces, except in some instances when existing facilities or sites are being altered (see 5.11.1 (B)). Recreation trails are typically 1/4-mile or more in length, and are often the recreation experience in and of itself. Although recreation trails primarily provide access to the out-of-doors, they may also incidentally provide access to lesser developed activities such as scenic vistas, interpretive points of interest, and fishing areas. To the maximum extent feasible, the accessible recreation trail must coincide with the route for the general public.

II. Procedure

The "highest degree of access practicable and feasible" is determined through a two-step process. The first step requires establishing the initial assessment of access practicable and feasible by identifying the recreation setting, analyzing the natural features, evaluating the amount of structural modification, describing the expected or desired recreation experience at a recreation site or facility, and consulting with interested persons with disabilities throughout the entire planning/design process. The second step requires confirming the initial assessment of the degree of access for feasibility and practicability using a series of exceptions.

A. Initial Assessment of Highest Degree of Access.

1. Recreation Setting. This factor is closely related to the amount of structural modification (see II(a)(3)), but focuses on the environs within which the recreation activity, site or facility is located. The recreation setting is defined as urban/rural, natural, back-country or primitive.

• URBAN/RURAL RECREATION SETTINGS are characterized by substantially urbanized and modified natural environments. Although sites may still appear natural, vegetation is often manicured. Sights and sounds of humans on-site are predominant. Large numbers of visitors can be expected, both on-site and in nearby areas. Facilities for highly intensive motor vehicle use, parking, and mass transit are often available. There is greater emphasis on user comfort, convenience, safety and accessibility, and lesser emphasis on the natural environment.

• NATURAL RECREATION SETTINGS are characterized by natural appearing environments with moderate evidence of human activity. Interaction between users will be low to moderate. Resource modification and utilization practices are evident, but harmonious with the natural environment. Conventional motor vehicle use is accommodated. Natural settings are less developed than urban/rural settings and place a greater emphasis on the natural environment.

• BACK-COUNTRY (SEMI-PRIMITIVE) RECREATION SETTINGS are characterized by a predominantly natural-appearing environment of moderate to large size. Interaction between visitors is low, but there is often evidence of others. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motor vehicle use may be prohibited at some sites. Back-country settings are rarely developed.

• PRIMITIVE RECREATION SETTINGS are typically characterized by pristine and rugged, unmodified environments of fairly large size. Interaction between users is very low, and evidence of others is minimal. The area is managed to be essentially free from developments and evidence of human-induced restrictions and controls. Motor vehicles are generally not permitted.

NOTE: Wheelchairs are not included in this restriction. As stated in Section 507(c) of the ADA: "In general, Congress reaffirms that nothing in the Wilderness Act is to be construed as prohibiting the use of a wheelchair in a wilderness area by an individual whose disability requires use of a wheelchair...the term wheelchair means a device designed solely for use by a mobility-impaired person for locomotion, that is suitable for use in an indoor pedestrian area."

2. Conditions of the Natural Environment (terrain, geologic and water features, vegetation). One of the primary reasons that people choose to participate in outdoor recreation activities versus recreation activities in the built environment is to enjoy the natural beauty and environmental features that outdoor areas provide. Modifications that threaten or destroy these features will compromise the reasons people want to recreate in them. Of all the natural features encountered in the outdoor recreation environment the one that will likely have the greatest influence on the degree of access is the terrain. Many areas served by recreation trails are characterized by steep slopes with rugged, rocky surfaces. Providing a "firm, stable, slip-resistant" surface generally will not be achievable because of the variations in natural surfacing, effects of weather, the need to provide for drainage off the trail, etc.

3. Amount of Structural Modification. Structural modifications are described as high, moderate, minimal and no development. The degree of access at a recreation site or facility shall be consistent with the level of development at the site. As the degree of structural modification increases or decreases, so may the degree of access of the recreation trail(s) within the site, based on standard outdoor construction practices and use of natural or native materials. In all cases, built structures will comply with ADAAG.

• HIGH DEGREE OF STRUCTURAL MODIFICATION: Design of the recreation site or facility reflects a high consideration for visitor comfort, convenience and safety. Structural modifications and developments are evident and tend to dominate the landscape. Construction materials used in these settings reflect an urbanized character. Trails and roads are typically paved, with an asphalt, concrete, or similar hardened surface.

• MODERATE DEGREE OF STRUCTURAL MODIFICATION: Rustic facilities provide some comfort for the user as well as site protection. Native materials are used but with more refinement in design. Construction materials are more rustic; trails and roads may be paved, but are more likely constructed of natural-appearing surfaces such as compacted crushed gravel.

• MINIMAL DEGREE OF STRUCTURAL MODIFICATION: Rustic and rudimentary facilities are provided primarily for site protection. Modifications to the natural landscape are subordinate to the character of the natural environment. Construction materials used enhance the predominantly natural-appearing character of the setting. Road and trail surfacing, if provided, is typically natural, i.e. native soil; use of foreign or imported material such as crushed rock is rare.

• NO DEVELOPMENT: Modifications to the natural environment are primarily made for resource protection, not for user comfort. Roads are generally not provided. The surface of trails is natural and may present many rocks, downed logs, and other naturally occurring obstacles. The guidelines presented in this report are generally not applicable to these undeveloped settings.

4. Recreation Experience. Once the recreation setting has been identified and the amount of structural modification has been evaluated, the next step in the process of determining the highest level of access practicable and feasible is to describe the expected/desired recreation experience. Outdoor recreationists represent a diversity of interests, skills, expertise and abilities; they are not necessarily looking for the same recreation experience. Components of the recreation experience that vary among recreationists include desired amount of risk and challenge, optimum amount of exertion, strenuous vs. more relaxed activity, passive vs. active recreation, etc. For this reason, it is important from a managerial perspective to ensure that a range of recreation opportunities are provided to facilitate a diversity of recreation experiences.

Recreation experiences and recreation settings are closely related. Although exceptions or anomalies exist, the relationship can be generally characterized as follows:

• URBAN/RURAL or HIGHLY DEVELOPED SETTINGS: In these settings, visitors generally expect an environment that has a level of accessibility similar to facilities in urbanized areas, where they can participate independently in all activities. Recreation sites, areas, facilities and opportunities are planned and designed to be convenient. Experiencing natural environments and solitude, having challenges and risks afforded by the natural environment, and using outdoor skills are relatively unimportant.

• NATURAL or MODERATELY DEVELOPED SETTINGS: There is approximately equal probability of experiencing affiliation with other user groups and experiencing isolation from the sights and sounds of humans. Opportunities for a high degree of interaction with the environment are common. This setting offers more challenge and risk for recreationists, but less than what would be found in lesser developed settings. Practice and testing of outdoor skills may be important. There is a greater emphasis on the natural landscape and fewer developments and human-influenced amenities.

• BACK-COUNTRY (SEMI-PRIMITIVE) or MINIMALLY DEVELOPED SETTINGS: The recreation experience associated with these settings involves a moderately high probability of isolation from the sights and sounds of humans. The environment is natural-appearing; the setting provides opportunities for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is very important since recreation opportunities often present a moderately high degree of challenge and risk.

• PRIMITIVE or UNDEVELOPED SETTINGS: There is an extremely high probability of experiencing isolation from the sights and sounds of humans in these settings. Opportunities abound for independence, closeness to nature, tranquillity, and self-reliance. Knowledge and application of outdoor skills is imperative. Recreation opportunities often present high degrees of challenge and risk with few to no human-influenced amenities. In these settings, preservation of the natural environment is the primary consideration.

5. Consultation with Interested Persons. Interested persons shall be invited to actively participate in the consultation process, including State or local accessibility officials, individuals with disabilities, and organizations representing individuals with disabilities. Furthermore, consumers and designers of accessible outdoor recreation site design and development shall actively participate in the process to determine the highest degree of access practicable and feasible. The consultation and participation of interested persons shall be documented and included in the project's public file.

B. Initial Assessment of the Degree of Access Summary Table

Description	Urban/Rural	Natural	Back-Country	Primitive
Easier	Norm	Possibility	Inconsistent	Inconsistent
Moderate	Possibility	Norm	Inconsistent	Inconsistent
Difficult	Inconsistent	Possibility	Norm	Inconsistent
Most Difficult	Inconsistent	Inconsistent	Possibility	Norm

C. Confirmation of the Initial Assessment of the Highest Degree of Access Using Series of Exceptions.

Because of the nature of the outdoor recreation environment, modifications to achieve the initial assessment of the highest degree of access may change the fundamental nature of the recreation activity, experience or setting beyond acceptable limits. For this reason, the initial assessment of the degree of access of the recreation site or facility must be confirmed for practicability and feasibility within the specific context of the natural features associated with, surrounding, and adjacent to the site or facility.

1. Although the initial degree of access of a recreation area, site or facility may be moderate or difficult, it will be appropriate in some instances (i.e. relatively flat or gently sloping terrain) to design the recreation trail to a higher degree of access in all or part of a recreation setting, area, site or facility if so doing would not change the fundamental nature of the activity, setting, or experience in that portion of the site.

2. The initial assessment of the degree of access may be modified if:

a. Provision of the initial assessment of the degree of access of the recreation trail in all or part of a recreation setting, area, site or facility will have such significant environmental impact as to threaten or destroy the unique natural, cultural or religious character of the setting;

b. Provision of the initial assessment of the degree of access of the recreation trail in all or part of a recreation setting, area, site or facility will threaten or destroy the character of a site designed to emphasize a natural-appearing setting, where natural or natural-appearing materials are utilized;

c. Provision of the initial assessment of the degree of access of the recreation trail in all or part of a recreation setting, area, site or, facility will threaten or destroy the character of a site designed to provide minimal structural modification in rugged, back country settings;

d. Provision of the initial assessment of the degree of access of the recreation trail in all or part of a recreation setting, area, site or facility will threaten or destroy the historic significance of a site.

3. Documentation. If the decision is made to modify the degree of access in all or part of a recreation setting, area, site or facility, that decision shall be documented and included in the project's public files. Decision documents shall include the names of the individuals on the planning and design team, design alternatives considered, the design solution, the decision official, and the concurrence of the reviewing officials.

D. Wilderness Areas. The designation of some undeveloped sites, such as a designated wilderness area under the Wilderness Act and semi-primitive and primitive land allocations, often may not allow the introduction of foreign materials or changes within the designated environment. In these sites, site or structural modifications are the exception and are only provided for resource protection.

If improvements are provided at points of public entry to these areas, an Outdoor Recreation Access Route that meets a difficult degree of access shall

connect all elements and spaces if feasible given the environmental constraints (i.e. environmental laws, steep or rugged terrain, limited space, etc.) presented at the points of public entry.

6.7.2 ALTERNATIVE B

1.0 All newly developed outdoor recreation trails shall comply with the standards for a recreation trail as specified in 1.1.

1.1 An outdoor recreation trail shall meet the following minimum requirements:

1.1.1 The surface of outdoor recreation trails shall be firm and stable.

1.1.2 The minimum clear width of an outdoor accessible recreation trail shall be 48".

1.1.3 If an outdoor accessible recreation trail has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 200'. An intersection of two trails is an acceptable passing space.

1.1.4 RUNNING GRADE. The sustained running grade for a highly developed recreation trail should not exceed 5%. If this is not feasible because of steep terrain, segments of the trail may exceed 5% up to a maximum grade of 10% for a maximum run of 30'. However, a minimum of 80% of the total trail length should not exceed the 5% sustained running grade criteria; grades should not exceed 5% for more than 20% of the total trail length.

1.1.5 CROSS SLOPE: The cross slope for a recreation trail should not exceed 3%.

1.1.6 Obstacles up to 1" in height may occur on any part of a highly developed recreation trail.

1.1.7 Highly developed recreation trails should provide rest areas at least 60" by 60" with fixed seating adjacent to the rest area, at reasonable intervals not to exceed 400'.

EXCEPTIONS:

1. When compliance with any of the standards in 1.1 will have such significant environmental impact as to threaten or destroy the unique environmental, natural, geologic, cultural or religious character of the site, the specific standard(s) in question, and only that standard(s) may be modified to meet the highest level of access practicable and feasible as defined in 1.2, 1.3, and 1.4. Documentation for the exception must include evidence that people with disabilities or their representatives were involved in the review process.

2. When it is determined in accordance with the procedures in ADAAG 4.1.7(2) that compliance with any of the standards in 1.1 would threaten or destroy the historic significance of a site, the specific standard(s) in question, and only that standard(s) may be modified to meet the highest level of access practicable.

3. When it is determined not to be feasible or practicable to comply with any of the standards in 1.1 due to severe elevations of the trail or environment, the specific standard(s) in question, and only that standard(s), may be modified to meet the highest level of access practicable and feasible as defined in 1.2, 1.3, and 1.4. Documentation for the exception must include evidence that people with disabilities or their representatives were involved in the review process.

4. When a trail is developed for a specific purpose, such as a challenging or rugged hike, and compliance with any of the standards in 1.1 would change the fundamental nature of that experience, the specific standard(s) in question, and only that standard(s), may be modified to meet the highest level of access practicable and feasible defined in 1.2, 1.3, and 1.4. Documentation for the exception must include evidence that people with disabilities or their representatives were involved in the design process.

5. When the designation of a site, such as a designated wilderness area under the Wilderness Act, does not allow the introduction of foreign materials or changes within the designated environment, the standards of a most difficult access outdoor recreation trail shall apply.

1.2 A moderate access outdoor recreation trail shall meet the following minimum requirements:

1.2.1 The surface of a moderate access outdoor recreation trail shall be firm and stable.

1.2.2 The minimum clear width of a moderate access outdoor recreation trail shall be 36".

1.2.3 If a moderate access outdoor recreation trail has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 300'. An intersection of two trails is an acceptable passing space.

1.2.4 **RUNNING GRADE.** The sustained running grade for a moderate access outdoor recreation trail should not exceed 8%. If this is not feasible because of steep terrain, segments of the trail may exceed 8% up to a maximum grade of 14% for a maximum run of 50'. However, a minimum of 80% of the total trail length should not exceed the 8% sustained running grade criteria; grades should not exceed 8% for more than 20% of the total trail length.

1.2.5 **CROSS SLOPE:** The cross slope for a moderate access outdoor recreation trail should not exceed 5%. However, when running grades exceed 8% up to 14% (see 1.2.4), the cross slope must not exceed 3%.

1.2.6 Obstacles up to 2" in height may occur on any part of a moderate access outdoor recreation trail.

1.2.7 Moderate access outdoor recreation trails may provide rest areas at least 60" by 60" with seating adjacent to the rest area, at reasonable intervals not to exceed 900'.

1.3 A difficult access outdoor recreation trail shall meet the following minimum requirements:

1.3.1 The surface of a difficult access outdoor recreation trails shall be firm and stable.

1.3.2 The minimum clear width of a difficult access outdoor recreation trail shall be 28".

1.3.3 If a difficult access outdoor recreation trail has less than 60" clear width, then passing spaces at least 60" by 60" shall be located at reasonable intervals not to exceed 400'. An intersection of two trails is an acceptable passing space.

1.3.4 **RUNNING GRADE.** The sustained running grade for a difficult access outdoor recreation trail should not exceed 12%. If this is not feasible because of steep terrain, segments of the trail may exceed 12% up to a maximum grade of 20% for a maximum run of 50'. However, a minimum of 80% of the total trail length should not exceed the 12% sustained running grade criteria; grades should not exceed 12% for more than 20% of the total trail length.

1.3.5 **CROSS SLOPE.** The cross slope for a difficult access outdoor recreation trail should not exceed 8%. However, when the trail's running grade exceeds 12% up to 20%, the cross slope may not exceed 5%.

1.3.6 Obstacles up to 3" in height may occur on any part of a difficult access outdoor recreation trail.

1.3.7 Difficult access outdoor recreation trails may provide rest areas at least 60" by 60" with seating adjacent to the rest area, at reasonable intervals not to exceed 1200'.

1.4 There are no minimum requirements for a most difficult access outdoor recreation trail.

7.0 PARKING

7.1 GENERAL OVERVIEW; RATIONALE

Most people travel to recreation sites in cars, vans, and buses. Therefore, it is important that parking areas and loading zones be designed and constructed in accordance with the following design guidelines to ensure accessibility. Based on ADAAG, these guidelines should be applied to all parking areas, regardless of the setting. The only situations in which these guidelines need not be followed are (1) in areas where parking facilities are entirely user-established, as is often the case in minimally developed (back country) recreation settings, and (2) in areas where motor vehicles are prohibited. However, if developed parking is provided adjacent to sites where motor vehicles are prohibited, accessible spaces should be provided.

7.2 NUMBER OF ACCESSIBLE PARKING SPACES (ADAAG 4.1.2(5)(A))

7.3 LOCATION OF ACCESSIBLE PARKING SPACES (ADAAG 4.6.2)

7.4 PARKING SPACE DESIGN (ADAAG 4.6.3)

1. Car Accessible Spaces

2. Van and RV Accessible Spaces (ADAAG 4.1.2(5)(b), 4.6.4)

3. Universal Design Spaces (ADAAG Appendix 4.6.3)

4. Access Aisle Design (ADAAG 4.6.3)

5. Campsite (Trailer) Parking Spaces. Parking at campsites in highly developed (urban/rural) settings must be designed according to the universal parking space design. All spaces must be 132 inches (3350 mm) wide with an adjacent access aisle that is 60 inches (1525 mm) wide. In moderately developed (natural) settings, a majority of campsites should meet these requirements whenever practicable based on topography, natural features, and customer expectations. Accessible parking spaces at tent sites must meet the requirements for car accessible spaces in guideline above. In total, a majority of the parking at campsites must be accessible.

6. Parking at Scenic Overlooks. In highly developed (urban/rural) and moderately developed (natural) settings, roadside areas that are reserved for scenic overlooks or points of interest must provide at least one parking space from which the view or point of interest can be enjoyed without exiting the vehicle, if appropriate and feasible for the site. The sightlines from these spaces must be considered with respect to vegetation, guardrails, and fences.

7.5 VERTICAL CLEARANCE (ADAAG 4.6.5)

7.6 PASSENGER LOADING ZONES (ADAAG 4.6.6)

7.7 BUS PARKING AND LOADING ZONES

Bus parking should be located near the accessible entrance to a facility to minimize the need for people with disabilities to maneuver through parking areas or along roads. Where bus parking is provided, a loading zone should be designated to provide protected space along the rear and door-side of the bus. In addition, if appropriate to the recreation site and setting, a small shelter with seating and wheelchair spaces may be provided adjacent to the bus parking area and loading zone as a comfortable place to wait and rest. Accessible toilets may also be provided within close proximity to bus parking.

7.8 PARKING AREA SURFACING (ADAAG 4.5.1)

The surface of parking areas must be stable, firm, and slip-resistant. Soft, loose surfaces such as loose sand or gravel, wet clay, and irregular surfaces such as cobblestones, can significantly impede wheelchair movement and create slipping and tripping hazards for people using other mobility aids.

In recreation settings, surface materials should be aesthetically appropriate and commensurate with user expectations. Concrete, asphalt, and well-maintained, compacted crushed stone can meet these requirements. Other materials may also be used to achieve a stable, firm, slip-resistant surface. Departures from this guideline that use other materials, designs, or technologies are permitted where the alternative materials, designs, and technologies will provide substantially equivalent or greater access and usability.

7.9 PARKING AREA SLOPE (ADAAG 4.6.3)

The cross slopes of parking areas must not exceed 1:20 (5 percent). However, the cross slopes of vehicle standing spaces and access aisles for accessible spaces must not exceed 1:50 (2 percent) in highly developed (urban/rural) settings and 1:33 (3 percent) in moderately developed (natural) and minimally developed (back country) settings.

Rationale: Construction equipment and materials used in the outdoor environment typically differ from those used in the built environment. Because of

this, tight specifications of a 2% slope, as cited in ADAAG, are often difficult to achieve.

7.10 SIGNS

1. All Accessible Parking Spaces (ADAAG 4.6.4)

2. Van and RV Accessible Spaces (ADAAG 4.6.4)

3. Location and Mounting Height (ADAAG 4.6.4)

4. Pavement Markings. If the parking lot is paved, the International Symbol of Accessibility should be painted on the parking stall surface. The paint used on the parking lot should always be slip-resistant.

5. Directional Signs. Signs directing people from accessible parking spaces to the accessible facility entrance should also be provided. Ready-made signs are available from sign companies, city traffic divisions, and state highway departments.

6. Colors and Materials (ADAAG 4.30.5). All signs identifying accessible parking must be designed so that characters and symbols contrast with the sign background. However, apart from this requirement, designers may select materials and colors that are appropriate for the recreation setting. Designers should select materials and colors commensurate with the sites recreation setting (e.g., carved wood signs in a minimally developed (back country) setting).

7.11 TACTILE WARNINGS (ADAAG 4.29.5)

If a pedestrian route crosses or adjoins a vehicular way and the walking surface is not separated from the road surface by curbs, railings, or similar elements, designers are encouraged to define the boundary between the areas with a continuous tactile warning that is 36 inches (915 mm) wide.

One recommended method for providing a tactile warning is to cut grooves or otherwise roughen the paved surface. However, care must be taken to ensure that such alterations to the surface texture do not create tripping hazards or impede travel by people in wheelchairs. If grooves are cut in the surface, they must be perpendicular to the dominant direction of travel and must not exceed 1/4 inch (6.5 mm) in depth or 1/2 inch (13 mm) in width.

Tactile warnings are recommended in highly developed (urban/rural) settings, moderately developed (natural) settings, and other locations where expectations of easier to moderate access prevail. In back country settings, motor vehicles may or may not be allowed, a difficult level of accessibility is expected, and parking areas are generally gravel. In these settings, facility managers must determine whether a warning system is necessary based on pedestrian and vehicle densities and common sense with respect to safety and risk management. If a warning system is desired, it can be achieved via appropriate changes in surface texture, provided that the materials used are stable, firm, slip-resistant, and do not present access barriers.

8.0 RESTROOM FACILITIES

8.1 GENERAL OVERVIEW; RATIONALE

Whenever restrooms are provided in developed settings, they must comply with all applicable accessibility standards.

8.2 TOILET ROOMS

8.2.1 Location and Minimum Number (ADAAG 4.22). All toilet rooms in developed sites must be accessible and must be located on an outdoor recreation access route. When two or more single-user portable toilet units are clustered at a single location, at least 5 percent, but no less than one unit, must be accessible. Accessible units must be identified by the International Symbol of Accessibility.

8.2.2 Doors (ADAAG 4.13)

8.2.3 Clear Floor Space (ADAAG 4.22.3). The accessible fixtures and controls required in accessible toilet rooms must be located on an outdoor recreation access route and must have an adjacent clear floor space that is at least 30 inches (760 mm) by 48 inches (1220 mm). In addition, an unobstructed turning space that is 60 inches (1525 mm) in diameter must be provided. The clear floor space at fixtures and

controls, the outdoor recreation access route, and the turning space may overlap. Departures from these guidelines through use of other designs and technologies are permitted where the alternative designs and technologies will provide substantially equivalent or greater access and usability (ADAAG 2.2).

8.2.4 Stalls (ADAAG 4.17)

8.2.5 Water Closets (ADAAG 4.16). All water closets in accessible stalls, and at least one water closet if no stalls are provided, must comply with the following where applicable:

1. Clear Floor Space. Clear floor space for water closets that are not in stalls must comply with Figure 3-8. Clear floor space may be arranged to allow either a left-handed or right-handed approach. The slope of the clear floor space must not exceed 2 percent in all directions, with the exception of clear floor spaces in vault toilets and other outdoor toilet facilities, where the clear floor space may slope up to 3 percent.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

2. Height

3. Grab Bars

4. Flush Controls

5. Dispensers. Toilet paper dispensers must permit a continuous sheet of paper to be obtained without pinching, grasping, or twisting of the wrist. Dispensers must be installed within reach of the water closet and must be at least 6 inches below the grab bar so as not to interfere with its use.

8.2.6 Urinals (ADAAG 4.18). If urinals are provided, at least one must comply with the following guidelines:

1. Height (ADAAG 4.18.2)

2. Clear Floor Space. A clear floor space of 30 inches by 48 inches (760 mm by 1220 mm) must be provided in front of urinals to allow forward approach. This clear floor space must adjoin or overlap an outdoor recreation access route. If the clear floor space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances must be provided. The slope of the clear floor space must not exceed 2 percent in all directions, with the exception of clear floor spaces in vault toilets and other outdoor toilet facilities, where the clear floor space may slope up to 3 percent. Urinal shields may be provided if they do not extend beyond the front edge of the urinal rim and have a minimum clearance of 29 inches (735 mm) between them.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

3. Flush Controls.

8.2.7 Lavatories and Mirrors (ADAAG 4.19)

8.2.8 Controls and Dispensers (ADAAG 4.27). If controls, dispensers, receptacles, or other equipment are provided, at least one of each must be on an outdoor recreation access route and must comply with the following:

1. Clear Floor Space. A clear floor space of 30 inches by 48 inches (760 mm by 1220 mm) must be provided at controls, dispensers, receptacles, and other operable equipment. The slope of the clear floor space must not exceed 2 percent in all directions, with the exception of clear floor spaces in vault toilets and other outdoor toilet facilities, where the clear floor space may slope up to 3 percent.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

2. Height of Operating Controls and Mechanisms.

3. Operation of Controls and Mechanisms.

9.0 TELEPHONES (ADAAG 4.31)

10.0 DRINKING FOUNTAINS (ADAAG 4.15)

10.1 GENERAL OVERVIEW; RATIONALE

Water sources are important amenities in campgrounds. These elements must be located adjacent to an outdoor recreation access route and must be designed to facilitate independent use. Design requirements include a hard-surfaced pad of appropriate size and slope, ample clear ground space, drain grates that will not pose hazards to wheels or cane tips, and appropriate heights for controls and spouts.

10.2 LOCATION AND NUMBER (ADAAG 4.1.3(10))

Where drinking fountains are provided, at least one shall comply with the following guidelines.

10.3 SPOUT HEIGHT (ADAAG 4.15.2)

10.4 SPOUT LOCATION (ADAAG 4.15.3)

10.5 CONTROLS AND OPERATING MECHANISMS (ADAAG 4.15.4)

10.6 CLEAR GROUND OR FLOOR SPACE (ADAAG 4.15.5)

10.7 KNEE SPACE (ADAAG 4.15.5)

11.0 HAND PUMPS AND HYDRANTS

11.1 GENERAL OVERVIEW; RATIONALE

Water sources are important amenities in campgrounds. These elements must be located adjacent to an outdoor recreation access route and must be designed to facilitate independent use. Design requirements include a hard-surfaced pad of appropriate size and slope, ample clear ground space, drain grates that will not pose hazards to wheels or cane tips, and appropriate heights for controls and spouts. The location and number of hand pumps are reserved since there are no hand pump designs currently available to provide the 5-pound maximum operating force necessary to ensure accessibility.

11.2 LOCATION AND NUMBER

All new hydrants, whether being installed in new construction or replaced in retrofits, must comply with the following guidelines.

11.3 SPOUT HEIGHT

The spouts of accessible hydrants and hand pumps must be no less than 28 inches above the ground and no more than 36 inches (915 mm) above the ground. Controls must not exceed a height of 40 inches (1017 mm) above the ground.

11.4 SPOUT LOCATION AND PAD

The spouts of accessible hydrants and hand pumps must be located at the front of the unit and must have an adjacent pad that is at least 60 inches square (1220 mm square). The pad surface must be stable, firm, and slip-resistant, and may not slope more than 3 percent. The pad slope should be designed to drain water away from the user.

11.5 CONTROLS AND OPERATING MECHANISMS (ADAAG 4.15.4)

Unit controls and operating mechanisms on hydrants and hand pumps must be front-mounted or side-mounted near the front edge of the unit. Controls and operating mechanisms must be operable with one hand and must not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls on hydrants must not exceed 5 lbf (22.2 N). The spout must provide a water flow not to exceed 60 psi.

There is no force requirement for activation of controls on hand pumps since there are no hand pump designs currently available to provide the 5 lbf maximum operating force necessary to ensure accessibility.

11.6 GRATINGS (ADAAG 4.5.4)

12.0 TRASH RECEPTACLES

12.1 GENERAL OVERVIEW; RATIONALE

If a receptacle is located along a heavily used path, it should be positioned so that there is enough room adjacent to the receptacle such that traffic flow will not be interrupted by people dumping their trash. A set-back of 12 inches minimum from the edge of a pedestrian path may be sufficient. However, if the receptacle is located adjacent to a vehicle road, a minimum 36 inches of clear ground space must be provided between the receptacle and the road edge to ensure safety. The surfacing material under and around the trash container should also be firm, stable, and slip-resistant.

12.2 NUMBER

All new trash receptacles, whether being installed in new construction or replaced in retrofits, must comply with the following guidelines.

12.3 LOCATION

Trash receptacles, if provided, must be located along an outdoor recreation access route.

12.4 HEIGHT

If the trash receptacle can only be approached from the front by a person using a wheelchair, the usable opening of the trash receptacle must be between 15 inches (380 mm) and 36 inches (915 mm) from the ground surface. If the receptacle can be approached from the side, the usable opening may be located between 9 inches (230 mm) and 36 inches (915 mm) above the ground.

12.5 OPERATING MECHANISMS

Because trash receptacles in the outdoor recreation environment are often subject to scavenging animals, designers must balance the need for access with the need to inhibit scavengers. If lids are used, they should be hinged and easily operable with one hand. The force required to open the lid must not exceed 5 lbf (22.2 N).

12.6 EXPOSED SURFACES

Trash receptacles must not have sharp edges.

12.7 CLEAR GROUND OR FLOOR SPACE

A minimum clear ground or floor space of 36 inches by 48 inches (915 mm by 1220 mm) must be adjacent to the receptacle. This clear ground or floor space may be positioned for forward or parallel approach. The clear ground or floor space may overlap the adjacent outdoor recreation access route but must be positioned so that a person in a wheelchair who is using the trash receptacle does not reduce the outdoor recreation access route to less than 32 inches.

12.8 DUMPSTERS

Dumpsters are important elements in recreation settings and should be selected and located for accessibility. However, since no designs are currently available that would meet accessibility requirements, no specific guidelines are provided.

13.0 ASSEMBLY AREAS

13.1 GENERAL OVERVIEW; RATIONALE

Assembly areas are built facilities intended to accommodate large groups of people. They include permanent or semi-permanent seating and, typically, a stage or similar performance space. Assembly areas are found in highly developed (urban/rural) and moderately developed (natural) settings, and therefore should be designed to provide an easier to moderate degree of access, in accordance with the following guidelines.

All assembly areas must comply with accessibility requirements, although the particular design and selection of materials will vary depending on the recreation setting. Accessibility requirements are largely concerned with the location and design of accessible seating and the paths connecting these seating areas with accessible entrances and other facility amenities. The key goal in relation to seating is to provide a variety of views and choice of seats to meet the widest possible range of needs and desires.

13.2 NUMBER OF WHEELCHAIR SEATING POSITIONS (ADAAG 4.1.3(19))

13.3 AISLE SEATS (ADAAG 4.1.3(19))

13.4 LOCATION OF ACCESSIBLE SPACES

13.5 POSITION OF ACCESSIBLE SPACE (ADAAG 4.33.3)

13.6 DESIGN OF WHEELCHAIR SPACES (ADAAG 4.33.3)

13.7 REMOVABLE SEATS (ADAAG 4.33.3)

13.8 COMPANION SEATS (ADAAG 4.33.3)

13.9 ACCESS TO SEATING (ADAAG 4.33.3)

13.10 EDGE PROTECTION

The need for edge protection (e.g., curbs, walls, railings, or projecting surfaces) at drop-offs must be determined based on safety and risk management objectives. Edge protection, when provided, should consist of a 4-inch high minimum curb. Safety rails should also be provided, particularly in urban/rural settings. The materials used to construct edge protections should be commensurate with the recreation settings and level of development. Metal, concrete, asphalt, brick, cut stone, boulders, dimensional lumber, logs, and native earth may all provide adequate and appropriate edge protection if properly constructed.

13.11 SURFACING AND SLOPE (ADAAG 4.33.4)

The surface of assembly areas must be stable, firm, slip-resistant, and level, with maximum slope of 3 percent in all directions.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

13.12 ACCESS TO PERFORMING AREAS (ADAAG 4.33.5)

13.13 ASSISTIVE LISTENING SYSTEMS (ADAAG 4.1.3(19)(B); 4.33.7)

14.0 TERRACES

14.1 GENERAL OVERVIEW; RATIONALE

Amphitheaters, assembly areas, and gardens are often provided in the outdoor recreation environment as terraced structures. Terraces are essentially stairs with higher than average risers and wider than average treads.

14.2 TERRACE WIDTH

Terraces intended for pedestrian use must be at least 48 inches (1220 mm) wide.

14.3 EDGE PROTECTION

The need for edge protection (e.g., curbs, walls, railings, or projecting surfaces) to prevent people from slipping off the terrace must be determined based on safety and risk management objectives. Edge protection, when provided, should consist of a 4-inch high minimum curb. Safety rails should also be provided, particularly in urban/rural settings. The materials used to construct edge protections should be commensurate with the recreation setting and level of development. Metal, concrete, asphalt, brick, cut stone, boulders, dimensional lumber, logs, and native earth may all provide adequate and appropriate edge protection if properly constructed.

14.4 SURFACE AND SLOPE

The terrace surface must be stable, firm, slip-resistant, and level, with maximum slope of 3 percent in all directions.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

14.5 ACCESS TO TERRACES (ADAAG 4.33.3)

All terraces must have an accessible means of egress. A means of egress is a continuous and unobstructed path of travel from any point in a site or facility to a public way. An accessible means of egress is one that complies with the Outdoor Recreation Access Route, Section II, 5.0.

15.0 BENCHES

15.1 BACKS AND ARMRESTS

When benches are provided in highly developed (urban/rural) and moderately developed (natural) settings, at least one at each required interval must provide backs and armrests.

15.2 CLEAR GROUND OR FLOOR SPACE (ADAAG 4.15.5)

16.0 PICNIC TABLES (ADAAG 4.32)

16.1 GENERAL OVERVIEW; RATIONALE

Picnic tables provide a basic recreation opportunity for many people that allows them to enjoy the outdoors as well as friends and family. To the maximum extent possible, picnic table design should allow people of all ages and abilities to sit together at the same table. The following are minimum guidelines for accommodating people who use wheelchairs at picnic tables. Departures from these guidelines through use of other designs and technologies are permitted where the alternative designs and technologies will provide substantially equivalent or greater access and usability.

All new picnic tables must meet accessibility requirements. Depending on visitor and designer preference, seating for people in wheelchairs can be provided at one or both ends of the table or along the side of the table by removing a section (36 inches minimum) of the bench. This cut-out design allows people to get up close to the table for food preparation and serving. Benches and table tops should be made of materials which are comfortable to touch in both hot and cold weather and that are appropriate to the setting.

16.2 NUMBER

All new picnic tables, whether being installed in new construction or replaced in retrofits, must comply with the following guidelines.

16.3 LOCATION

When picnic tables are provided in highly developed (urban/rural) or moderately developed (natural) settings, a majority of the tables must be located adjacent to an outdoor recreation access route.

16.4 SEATING FOR PEOPLE USING WHEELCHAIRS (ADAAG 4.32.2)

16.5 TABLE HEIGHT (ADAAG 4.32.4)

The top of an accessible picnic table must not be higher than 32 inches (865 mm) above the ground.

16.6 KNEE CLEARANCES (ADAAG 4.32.3)

To accommodate a person in a wheelchair, the seating space at a picnic table must have adequate knee space. The knee space requirements vary depending on whether the table design provides toe clearances. For tables with toe clearance, the knee space must measure at least 28 inches (685 mm) high, 30 inches (760 mm) wide, and 19 inches (485 mm) deep. For tables without toe clearance, the knee space must be at least 28 inches (685 mm) high, 30 inches (760 mm) wide, and 24 inches (485 mm) deep.

Rationale: A 28" knee space is specified due to public scoping and input.

16.7 CLEAR AREA AROUND PICNIC TABLES

An accessible picnic table must have clear ground space of at least 36 inches (915 mm) around the perimeter of the table, although 48 inches is recommended. This space may overlap with the clear space required for other elements, but must never be encroached upon by another element.

16.8 SURFACE AND SLOPE (ADAAG 4.5)

The surface of the clear ground space around the picnic table must be stable and firm, and evenly graded, with a maximum slope of 3 percent in all directions.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

17.0 FIRE RINGS AND GRILLS

17.1 GENERAL OVERVIEW; RATIONALE

The following guidelines should be applied in campsites where fire rings or pedestal grills are provided for public use. Departures from these guidelines through use of other designs and technologies are permitted where the alternative designs and technologies will provide substantially equivalent or greater access and usability. In all designs, two activities must be accommodated, fire building and cooking. In highly developed (urban/rural) settings, accessible fire rings must have a raised fire-building surface to allow independent use by people using wheelchairs; pedestal grills may also be provided. In moderately developed (natural) settings, the fire-building surfaces of fire rings need not be raised. However, if they are not raised, then an accessible pedestal grill must be provided to ensure an accessible cooking surface.

All new fire rings and grills must meet accessibility requirements. To ensure safety, they must be located off the path and should never be installed in the heavily traveled areas between parking or outdoor recreation access routes and the camping or picnic unit. In addition, fire rings and grills should be located downwind from camping and seating areas (based on the predominant wind direction at the site) and grills on post-mounted grills should rotate to allow for changes in wind direction. Also, handles on fire rings and grills must be easy to grasp and should not conduct heat.

In urban/rural settings, the surfacing that is used under and around the fire ring or grill must be tactually distinct from adjacent surfaces. For example, the accessible route leading up to the fire ring in a camp unit may be asphalt, whereas the fire ring itself may be installed on a heat-resistant concrete pad of exposed aggregate. This will provide a tactile indication that a different element is being approached along the path. In roaded natural settings, such treatments may not be as appropriate, particularly in areas that are less developed. In these areas, designers may want to use a base of well-compacted, crushed gravel around fire rings and grills. In any case, some type of surface treatment other than native soil is recommended. Soil should be avoided as a surfacing around fire ring areas because campers will use the soil to douse fires and hot embers, not realizing that the holes they are creating will be safety and tripping hazards for the next visitors to the site.

17.2 NUMBER

All new fire rings and grills, whether being installed in new construction or replaced in retrofits, must comply with the following guidelines.

17.3 LOCATION

Fire rings and pedestal grills, if provided, must be located adjacent to an outdoor recreation access route.

17.4 CLEAR GROUND SPACE

Fire rings and pedestal grills must have a clear, level ground space of at least 36 inches (1220 mm) on all sides, although 48 inches is recommended. This space may overlap with the clear ground space required for other elements, but must never be encroached upon by another element.

17.5 HEIGHTS

The height requirements for the fire-building surface and the cooking surface of fire rings and pedestal grills varies depending on whether the site is a highly developed (urban/rural) setting or a moderately developed (natural) setting.

1. Guidelines in Highly Developed (Urban/Rural) Settings. In highly developed (urban/rural) settings, the following guidelines must be applied:

a. The fire-building surface of all fire rings must be at least 9 inches (229 mm) above the ground.

b. Fire rings with fixed grills must have cooking surfaces that are at least 17 inches (430 mm) above the ground and no higher than 19 inches (485 mm) above the ground.

c. Fire rings with adjustable grills must have cooking surfaces that are at least 19 inches (485 mm) but no more than 24 inches (610 mm) above the ground.

d. Pedestal grills must have cooking surfaces that are 30 to 36 inches above the ground and the grill must be able to rotate 360 degrees to allow users to adjust it based on wind direction. Pedestal grills must also provide at least 27 inches of knee clearance.

2. Guidelines in Moderately Developed (Natural Settings). In moderately developed (natural) settings, the same guidelines apply, except that the fire-building surfaces need not be raised if doing so disrupts the sites character or natural features. If the fire-building surfaces of fire rings are not raised, then a pedestal grill must be provided as an accessible cooking surface.

17.6 OPERATING MECHANISMS (ADAAG 4.27)

All operating mechanisms for adjusting the cooking surface must be operable with one hand and must not require tight grasping, pinching, or twisting of the wrist. The force required to adjust the grill must not exceed 10 lbf (22.2 N).

Rationale: The weight of materials needed to withstand heating/cooling and vandalism exceeds 5 lbs.

18.0 TENT PADS

18.1 GENERAL OVERVIEW; RATIONALE

The accessibility guidelines for tent pads should be applied whenever such facilities are provided. Requirements for size and slope will ensure that tent pads can accommodate a tent and camping supplies, with ample room remaining for a person in a wheelchair to maneuver. While tent pads should be located adjacent to hard surface areas, they do not need to be hard-surfaced themselves. Although the selected material must provide a firm, stable, and slip-resistant surface, it should also be comfortable and should make it easy to pound in tent stakes. Raised pads help facilitate transfers from wheelchairs to the pad surface, but are not required. When appropriate to the setting and topography, some raised pads may be provided, giving attention to aesthetics, natural terrain, drainage, maintenance, and erosion control.

18.2 NUMBER

If tent pads are provided, a majority must comply with the following guidelines.

18.3 LOCATION

Accessible tent pads, if provided, must be located adjacent to an outdoor recreation access route.

18.4 CLEAR GROUND SPACE

Accessible tent pads must be large enough to accommodate a tent and still provide at least 36 inches (915 mm) of clear ground space around the tent. This space may overlap with the clear ground space required for other elements, but must never be encroached upon by another element.

18.5 SURFACE AND SLOPE

The surface of accessible tent pads must be stable and evenly graded, with a maximum slope of 3 percent in all directions.

Rationale: To insure floor drainage and to accommodate standard construction practices and construction materials.

19.0 HOOKUPS

Water and utility hookups are important amenities in campsites. When provided, they must be designed in accordance with accessibility guidelines, including requirements for clear ground space, reach ranges, and operation. Hookups should be located to the back of the drivers side of back-up parking spurs.

III. RECREATION ACTIVITIES AND THEIR ASSOCIATED ACCESSIBILITY STANDARDS

The following are minimum guidelines for accessibility in the most common elements and spaces of the outdoor recreation environment. Scoping provisions are provided for each set of

guidelines to assist designers in determining when a particular element or space must be constructed in accordance with these guidelines. This report recognizes that the elements and activities discussed herein are not all inclusive, but instead they serve as a guide to design in the outdoor environment. Elements and spaces in highly developed (urban/rural) and moderately developed (natural) settings that are not addressed in these guidelines should be designed using the anthropometric data presented in Section II, Space Allowances and Reach Ranges.

1.0 CAMPGROUNDS

1.1 GENERAL OVERVIEW; RATIONALE

Camping is one of the most popular recreation activities in America. It provides settings in which individuals, families, and groups can relax, eat, and play together in the out-of-doors. To ensure that all people are able to participate in these important group activities, it is critical that these areas be designed using universal design concepts.

When campgrounds are provided in highly developed (urban/rural) and moderately developed (natural) settings, they should follow the basic performance standards set forth in ADAAG (e.g., clear space, reach ranges, etc.). These standards can be applied to tables, water sources, fire rings and grills, trash receptacles, and restrooms. Guidelines for each of these elements, based on ADAAG, are provided below. In addition, the paths that provide access to these areas should be designed to provide an easier (urban/rural) or moderate (natural) degree of access in terms of gradient, width, cross-slope, and surface material.

Whenever accessible camping units are provided, they should be situated in different locations throughout the site to provide a variety of choices and to take advantage of the areas natural features. For example, some campsites should be provided in shady areas and others should be located where they will have direct sunlight; some units should be clustered together to accommodate large groups or located near other site amenities, such as athletic facilities or indoor cooking facilities. Other units should be in secluded areas, where people can enjoy bird watching, studying nature, or simply being alone. However, it may not be possible to provide the expected degree of access in all areas of the site due to environmental constraints. In that case, it is critical to ensure that paths meeting the expected degree of access connect a majority of the units in each of the different recreation experiences to the sites primary activities and elements. Segregated special areas are neither appropriate nor desirable.

The furnishings in picnic areas and camp units vary depending on the sites recreation setting and level of development. Some of the most common elements are addressed in the following discussion. Note that all structural elements shall be accessible. The location of the cooking unit in relation to the picnic table should be based on consideration of reach ranges, space allowances, and ease of transferring hot food from a cooking unit to the table.

1.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

1.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

1.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

1.5 RECREATION TRAILS
-Refer to Section II; 6.0

1.6 PARKING
-Refer to Section II; 7.0

1.7 RESTROOM FACILITIES
-Refer to Section II; 8.0

1.8 TELEPHONES (ADAAG 4.31)
-Refer to Section II; 9.0

1.9 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

1.10 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

1.11 TRASH RECEPTACLES
-Refer to Section II; 12.0

1.12 ASSEMBLY AREAS
-Refer to Section II; 13.0

1.13 TERRACES
-Refer to Section II; 14.0

1.14 BENCHES
-Refer to Section II; 15.0

1.15 PICNIC TABLES (ADAAG 4.32)
-Refer to Section II; 16.0

1.16 FIRE RINGS AND GRILLS
-Refer to Section II; 17.0

1.17 TENT PADS
-Refer to Section II; 18.0

1.18 HOOKUPS
-Refer to Section II; 19.0

2.0 PICNIC AREAS

2.1 GENERAL OVERVIEW; RATIONALE

Picnicking is a popular recreation activity in America. Picnic areas provide settings in which individuals, families, and groups can relax, eat, and play together in the out-of-doors. To ensure that all people are able to participate in these important group activities, it is critical that these areas be designed using universal design concepts.

When picnic areas are provided in highly developed (urban/rural) and moderately developed (natural) settings, they should follow the basic performance standards set forth in ADAAG (e.g., clear space, reach ranges, etc.). These standards can be applied to tables, water sources, fire rings and grills, trash receptacles, and restrooms. Guidelines for each of these elements, based on ADAAG, are provided below. In addition, the paths that provide access to these areas should be designed to provide an easier (urban/rural) or moderate (natural) degree of access in terms of gradient, width, cross-slope, and surface material.

Whenever picnic units are provided, they should be situated in different locations throughout the site to provide a variety of choices and to take advantage of the areas natural features. For example, some picnic units should be provided in shady areas and others should be located where they will have direct sunlight; some picnic units should be clustered together to accommodate large groups or located near other site amenities, such as athletic facilities or indoor cooking facilities. Other picnic units should be in secluded areas, where people can enjoy bird watching, studying nature, or simply being alone. However, it may not be possible to provide the expected degree of access in all areas of the site due to environmental constraints. In that case, it is critical to ensure that paths meeting the expected degree of access connect a majority of the units in each of the different recreation experiences to the sites primary activities and elements. Segregated special areas are neither appropriate nor desirable.

The furnishings in picnic areas and camp units vary depending on the sites recreation setting and level of development. Some of the most common elements are addressed in the following discussion. Note that all structural elements shall be accessible. The location of the cooking unit in relation to the picnic table should be based on consideration of reach ranges, space allowances, and ease of transferring hot food from a cooking unit to the table.

2.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

2.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

2.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

2.5 RECREATION TRAILS
-Refer to Section II; 6.0

2.6 PARKING
-Refer to Section II; 7.0

2.7 RESTROOM FACILITIES
-Refer to Section II; 8.0

2.8 TELEPHONES (ADAAG 4.31)
-Refer to Section II; 9.0

2.9 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

2.10 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

2.11 TRASH RECEPTACLES
-Refer to Section II; 12.0

2.12 BENCHES
-Refer to Section II; 15.0

2.13 PICNIC TABLES (ADAAG 4.32)
-Refer to Section II; 16.0

2.14 FIRE RINGS AND GRILLS
-Refer to Section II; 17.02.5

3.0 FISHING FACILITIES

3.1 GENERAL OVERVIEW; RATIONALE

Fishing is a favorite American pastime that continues to grow in popularity. For many anglers, catching a fish is actually a secondary benefit to the opportunity to relax and unwind with friends, family members, or by themselves. Fishing facilities can provide a variety of integrated recreation experiences if they are carefully planned and managed using universal design concepts. If ample variety is provided, each angler will be able to match his or her abilities to the challenges offered at different fishing stations.

The decision to make a fishing site accessible must be made by site managers based on customer expectations and the characteristics of the recreation setting. Accessible fishing facilities should be interspersed within the existing pattern of fishing spots so that an integrated fishing experience and desirable fishing locations are available to all anglers. Specific location of accessible areas should respond to customer expectations, topography, and proximity to other facilities.

Fishing facilities should be planned and designed to provide a variety of integrated experiences and settings so that each angler has the opportunity to match his or her fishing skills to the challenges offered at different fishing stations. While fishing occurs in all types of settings, modifications to stream banks and shorelines to improve access are primarily found in highly developed (urban/rural) and moderately developed (natural) settings, and only occasionally in minimally developed (back country) settings.

3.2 LEVELS OF DEVELOPMENT

Fishing is a recreation activity that can be found in each type of recreation setting. However, modifications to improve accessibility to fishing facilities are primarily found in highly developed (urban/rural) and moderately developed (natural) sites, and rarely in minimally developed (back country) areas.

The following guidelines are for accessible fishing stations in urban/rural and roaded natural settings.

3.2.1 HIGHLY DEVELOPED; Urban/Rural Fishing Stations. Highly developed (urban/rural) fishing stations are in sites with a high level of structural modification where anglers expect a safe and easier degree of access.

1. Location. The fishing station should be located on an outdoor recreation access route commensurate with the recreation setting and should be located in close proximity (within 1/8 mile) to accessible parking and an accessible toilet facility.

2. Fishing Station Design. The fishing station should be designed according to the following specifications:

a. Determine the capacity of the fishing site based on the scale of the body of water on which it is located and a typical days demand for fishing.

b. Ensure that the surface of the fishing station is firm and stable with a maximum slope of 1:33 (3 percent) in any direction. When possible, provide a tactile distinction between the surface of the fishing station and the surface of the adjacent outdoor recreation access route.

c. Provide a minimum of 5 linear feet (1525 linear mm) per angler, or 12 feet (3660 mm) for two anglers, along the water's edge.

d. Provide 8 feet (2440 mm) of clear space behind anglers to allow unconstricted pedestrian circulation.

e. Provide adequate maneuvering space at the fishing site to accommodate a person using a wheelchair. At a minimum, there must be a clear space of 60 inches (1525 mm) diameter.

3. Safety Rails. Safety rails must be provided at the waters edge and at all drop-offs. Safety rail design should incorporate armrests, inclined at 30 degrees toward anglers, as well as other amenities, such as tackle box shelves and fishing rod holders. Armrests should be 32 inches (815 mm) to 34 inches (865 mm) high for seated anglers, 42 inches to 47 inches high for standing anglers. Safety rails should meet the guidelines in ADAAG 4.9, with the exception that safety rail mounting height may be reduced to 32 inches (815 mm).

4. Curbs at Drop-offs. Edge protection from drop-offs should be provided in developed settings, commensurate with the recreation setting and level of development. Protection should be accomplished with 4-inch (102-mm) high curbs at platform edges.

5. Seating. Seating, if provided, should be on or adjacent to the fishing site to accommodate nonfishing companions. Seating design should comply with guideline 3.6. Seating location must not intrude upon required clear spaces for the fishing station or outdoor recreation access routes.

6. Shade and Shelter. Fishing stations should be located to take advantage of natural shade and shelter. In addition, or if none exists, it may be appropriate to provide constructed shade structures. Vegetation or structures for shade should not reduce the vertical clearance to less than 144 inches (3660 mm) above the fishing station (required for casting) or less than 80 inches (2030 mm) above an outdoor recreation access route.

3.2.2 MODERATELY DEVELOPED; Natural Fishing Stations. Fishing stations in moderately developed (natural) settings are designed to maintain a natural appearance. Structural modifications in these sites are minimal and considerations for accessibility are balanced with and sometimes superseded by the desired recreation experience or the desire to preserve the natural setting. Anglers who visit these sites expect a moderate degree of access.

1. Location. The fishing station should be located on an outdoor recreation access route commensurate with the recreation setting and should be in close proximity (within 1/4 mile, if appropriate to the site) to accessible parking and an accessible toilet facility.

2. Fishing Station Design. The fishing station should be designed according to the following specifications:

a. Determine the capacity of the fishing site based on the scale of the body of water on which it is located and a typical days demand for fishing. Fishing stations in roaded natural settings typically accommodate only one or two anglers, although larger stations may be appropriate based on site use and conditions.

b. Ensure that the surface of the fishing station is firm and stable, with a maximum slope of 1:28 (3.5 percent) in any direction.

c. Provide a minimum of 5 linear feet (1525 linear mm) per angler, or 12 feet (3660 mm) for two anglers, along the water's edge.

d. Provide 8 feet (2440 mm) of clear space behind anglers to allow unconstricted pedestrian circulation.

e. Provide adequate maneuvering space at the fishing site to accommodate a person using a wheelchair. At a minimum, there must be a clear space of 60 inches (1525 mm) diameter.

3. Safety Rails/Protection from Drop-offs. Safety rails may be replaced with natural materials, such as boulders or logs, to provide protection from drop-offs without destroying the sites rustic character. Other amenities can also make use of natural materials. For example, a tackle box shelf may be provided by a large, flat boulder that extends 9 inches to 15 inches above the ground surface.

4. Seating. Seating, if provided, should be on or adjacent to the fishing site to accommodate nonfishing companions. Seating design should comply with guideline 3.6. Seating location must not

intrude upon required clear spaces for the fishing station or outdoor recreation access routes.

5. Shade and Shelter. Fishing stations should be located to take advantage of natural shade and shelter. While a shade structure might be constructed, it may be more appropriate for designers to specify shade vegetation, such as native deciduous trees, where none occurs naturally. Vegetation or structures for shade should not reduce the vertical clearance to less than 144 inches (3660 mm) above the fishing station (required for casting) or less than 80 inches (2030 mm) above an outdoor recreation access route.

3.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

3.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

3.5 RECREATION TRAILS
-Refer to Section II; 6.0

3.6 PARKING
-Refer to Section II; 7.0

3.7 RESTROOM FACILITIES
-Refer to Section II; 8.0

3.8 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

3.9 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

3.10 TRASH RECEPTACLES
-Refer to Section II; 12.0

3.11 BENCHES
-Refer to Section II; 15.0

4.0 SCENIC OVERLOOKS

4.1 GENERAL OVERVIEW; RATIONALE

A scenic overlook is an interior or exterior area from which a person views a point of interest. An overlook may consist of arrival and staging areas, an observation area and/or structure (tower, deck) interpretive displays, and attendant facilities, i.e., parking and restrooms. Many overlooks are located in or closely associated with a built environment, either at buildings or along roadways. Others may be located along trails and incorporated into the trail theme.

4.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

4.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

4.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

4.4.1 Amendments to Outdoor Recreation Access Routes

Add: "to provide an outdoor recreation access route to an observation area, tower, or deck at a scenic overlook" to ADAAG 4.1.3, EXCEPTION 4 (Platform Lifts).

Rationale: Modification to include scenic overlook structures as exceptions in ADAAG. In many cases, installation of an elevator at a scenic overlook would alter the fundamental nature and compromise the scenic value of the experience.

4.5 SAFETY HANDRAILS, WALLS OR CURBS: SCENIC OVERLOOK OBSERVATION AREA

Stationary handrails, walls or curbs, if provided for safety reasons, shall be of appropriate materials and/or height to permit unrestricted viewing opportunities for viewing heights of 32" to 51".

Rationale: When the purpose of the facility is to permit viewing of a point of interest, an uninterrupted viewshed must be provided. This recommendation conflicts with existing guidelines contained within OSHA standards, UBC standards, and NFPA.

4.6 TELESCOPES AND PERISCOPES

1. Telescopes or periscopes, if provided, shall conform to reach range requirements in ADAAG sections 4.2.5 and 4.2.6. Controls and operating mechanisms shall comply with requirements of ADAAG 4.27.4.

2. If provided, telescopes or periscopes shall be configured to permit viewing from eye level heights of 32" to 51". This may be accomplished by providing multiple units fixed at varying heights or by providing one or more adjustable units which accommodate variable viewing heights.

3. Telescopes and periscopes, if provided shall be installed for use at all viewing heights to permit access to this opportunity. Fifty-one percent, but not less than one, shall be fully accessible. When existing telescopes or periscopes are replaced, they will be replaced with fully accessible models until the 51% requirement has been achieved.

Rationale: It is no more expensive to install accessible viewing equipment than non-accessible; however, retrofitting of existing equipment can become a financial burden.

4.7 OBSERVATION AREA SURFACING
Surfacing shall comply with ADAAG 4.5.

4.8 PARKING
-Refer to Section II; 7.0

4.9 RESTROOM FACILITIES
-Refer to Section II; 8.0

4.10 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

4.11 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

4.12 TRASH RECEPTACLES
-Refer to Section II; 12.0

4.13 BENCHES
-Refer to Section II; 15.0

5.0 BEACH FACILITIES

5.1 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

5.2 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

5.3 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

1. At least one accessible route must connect public transportation stops, accessible parking spaces, accessible passenger loading zones, and public streets, sidewalks or boardwalks to a point 36" beyond the water's edge at high tide. To the maximum extent possible, the accessible route must coincide with the route of travel for the general public.

Rationale: Persons with disabilities must have access not only to the beach but also across the beach to the water. The hard packed sand below the high tide level will provide an accessible route to the water at low tide.

2. Within the site, at least one accessible route must connect all accessible support facilities (restrooms, rescue and first aid stations, shower and dressing rooms, concession areas, etc.) and accessible water based and non-water based recreation areas.

3. Beach routes in highly and moderately developed beach areas will conform to the specifications of an easier or moderate outdoor recreation access route with the exception of the minimum width being 60". In minimally developed beach areas, beach routes will conform to the specifications of a difficult outdoor recreation access route.

Rationale: A firm and stable surface may be accomplished by permanent (e.g., concrete, wood, plastic decking, etc.) or removable (e.g., mats, mesh, etc.) materials. When removable surfaces are used, they must be in place during daylight hours. The 60" surface is required to allow wheelchair users to transfer from the surface to the sand while permitting others to use the access route.

4. Any point at which the surface of an accessible route is in contact with sand, it must have beveled edges with a slope no greater than 1:6 continuing to the lowest depth of the surface material. The beveled edge must extend beyond the minimum clear width of the accessible route.

Rationale: The shifting of sand may cause the sand to erode away from the edge of the accessible route, creating a vertical change in level greater than 1/2". The beveled edge will also facilitate safe movement perpendicular to the surface by those walking, beach maintenance or safety vehicles.

5. Accessible routes must be properly maintained (e.g., sand and algae removed).

Rationale: Sand and algae will reduce or eliminate the firmness, stability, and slip resistance of access route.

5.4 SUPPORT FACILITIES

5.4.1 Support facilities (restrooms, rescue and first aid stations, shower and dressing rooms, concession areas, etc.) along the outdoor recreation access route must comply with relevant ADAAG provisions.

5.4.2 When provided, outdoor showers must be along the outdoor recreation access route.

5.4.3 At least one male and one female restroom or shower room along the outdoor recreation access route must contain a dressing bench complying with ADAAG 4.35.4.

Rationale: Persons using wheelchairs may need a surface to change clothes.

5.5 LIFEGUARD STATIONS

When provided, a minimum of one lifeguard stand must be located no more than 15' from the recreation/beach access route.

Rationale: A person with a disability may need to attract the attention of and communicate with a life guard. This may not be possible at greater distances.

5.6 WARNINGS

Where provided, both audio and visual emergency signals must be available.

5.7 RECREATION TRAILS
-Refer to Section II; 6.0

5.8 PARKING
-Refer to Section II; 7.0

5.9 RESTROOM FACILITIES
-Refer to Section II; 8.0

5.10 TELEPHONES (ADAAG 4.31)
-Refer to Section II; 9.0

5.11 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

5.12 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

5.13 TRASH RECEPTACLES
-Refer to Section II; 12.0

5.14 BENCHES
-Refer to Section II; 15.0

6.0 EQUESTRIAN FACILITIES

6.1 GENERAL OVERVIEW; RATIONALE

Accessible equestrian facilities should provide (1) access to the place where horses are available, (2) transfer capabilities onto and off the horse, and (3) access to horse care areas and related facilities, such as water hydrants and corrals. The decision to make equestrian facilities accessible must be made by site managers based on customer expectations and the characteristics of the recreation setting.

6.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

6.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

6.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

6.5 ACCESSIBLE TRANSFER PLATFORM

A transfer platform will assist some people with disabilities in transferring onto and off of the horses by allowing them to get to the level of the horses stirrups. An accessible transfer platform must meet the following specifications:

6.5.1 Platform Size. The surface of an accessible transfer platform must be at least 60 inches (1525 mm) by 72 inches (1830 mm) and must be level.

6.5.2 Platform Height. The platform must be raised at least 24 inches above the ground surface.

6.5.3 Ramp-to-Platform Surface. The platform must be accessible by a ramp of a maximum 1:12 (8.33 percent) slope.

6.5.4 Handrail. A handrail that is 30 inches (760 mm) to 34 inches (865 mm) high should be provided on at least one side of the platform.

6.5.5 Curbs at Edges. Edge protection from drop-offs should be provided in developed settings, commensurate with the recreation setting and level of development. Protection should be accomplished with 4-inch (102-mm) high curbs at platform and ramp edges.

6.6 RECREATION TRAILS
-Refer to Section II; 6.0

6.7 PARKING
-Refer to Section II; 7.0

6.8 RESTROOM FACILITIES
-Refer to Section II; 8.0

6.9 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

6.10 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

6.11 TRASH RECEPTACLES
-Refer to Section II; 12.0

6.12 BENCHES
-Refer to Section II; 15.0

7.0 SWIMMING FACILITIES

7.1 GENERAL OVERVIEW
Swimming areas can be anything from highly developed pools in urban/rural settings to swimming holes in roaded natural or even semi-primitive settings. Access to swimming areas can be provided either by ramps or stairs.

7.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

7.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

7.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

7.5 LIFEGUARD/FIRST AID STATION

When provided, a minimum of one lifeguard stand must be located no more than 15' from the recreation trail.

Rationale: A person with a disability may need to attract the attention of and communicate with a life guard. This may not be possible at greater distances.

7.6 WATER ACCESS

Swimming areas can be anything from highly developed pools in urban/rural settings to swimming holes in natural or even back country settings. Ramps and stairs are two common forms of water entry. The following guidelines for ramps into water and stairs into water are applicable in urban/rural settings and in natural settings where warranted by the level of development and customer expectations.

7.6.1 Ramps into Water. Ramps can facilitate access to outdoor pools, lakes, streams, or even the ocean. When provided, ramps into water must be designed to the following specifications:

1. Slope. The slope of ramps into water must not exceed 1:12 (8.33 percent).

2. Rise and Horizontal Projection. The maximum rise and horizontal projection for any run of a ramp into water must be as follows:

	Rise	Projection
highly developed (urban/rural)	30 inches (760 mm)	30 feet (9 m)
moderately developed (natural)	60 inches (1220 mm)	40 feet (12 m)

3. Clear Width. Ramps into water must have a clear width of at least 36 inches (916 mm).

4. Landings. Landings are required at the top and bottom of each ramp segment. Landings must meet the following specifications:

a. The landing must be at least 60 inches (1525 mm) long, with no obstructions, and as wide as the ramp segment leading to it.

b. If the ramp changes direction at the landing, the landing must be at least 60 inches by 60 inches (1525 mm by 1525 mm).

5. Handrails. The need for handrails must be determined by site designers and managers. If handrails are provided, they must meet the specifications listed in section II, Outdoor Recreation Access Routes, 5.6.6, with the following exception:

a. At the bottom (water end) of the ramp, the top handrail must end at water level, extending for twelve inches parallel to the water surface. In addition, handrails must not end abruptly. They must return to a wall surface, a post, or the ground or they must be rounded. This will help prevent the possibility of a person inadvertently injuring themselves on an exposed end when entering or exiting the swimming area.

7.6.2 Stairs into Water. Stairs can also facilitate access to swimming areas by allowing people with disabilities to lower themselves into the pool gradually. If a raised platform is also provided adjacent to the top of the stairs from which people can transfer from their wheelchairs to the stairway surface, many people will be able to enter the pool without assistance. When provided, stairs into water must be designed to the following specifications:

1. Location. Stairs must be used to provide access to swimming areas, in lieu of ladders, when access cannot be accomplished or is not desired with a ramp.

2. Width. Stairs into water must have a clear width of at least 36 inches (915 mm).

3. Treads and Risers. Stairs into water must have steps with uniform riser heights and tread widths. Stair treads must be at least 18 inches (280 mm) wide, measured from riser to riser. Stair risers must be at least 4 inches (102 mm) high, but not higher than 6 inches (153 mm).

4. Handrails. The need for handrails must be determined by site designers and managers. If handrails are provided, they must meet the same specifications as handrails on maximum ramp segments (section 5.4.6), with the following exception:

a. At the bottom (water end) of the stairs, the top handrail must end at water level, extending for twelve inches parallel to the water surface. In addition, handrails must not end abruptly. They must return to a wall surface, a post, or the ground or they must be rounded. This will help prevent the possibility of a person inadvertently injuring themselves on an exposed end when entering or exiting the swimming area.

7.7 RECREATION TRAILS
-Refer to Section II; 6.0

7.8 PARKING
-Refer to Section II; 7.0

7.9 RESTROOM FACILITIES
-Refer to Section II; 8.0

7.10 TELEPHONES (ADAAG 4.31)
-Refer to Section II; 9.0

7.11 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

7.12 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

7.13 TRASH RECEPTACLES
-Refer to Section II; 12.0

7.14 BENCHES
-Refer to Section II; 15.0

8.0 TRAILHEADS

8.1 GENERAL OVERVIEW; RATIONALE

Trailheads range in development from that of highly developed to nonexistent. Whenever developed features are provided, the following accessibility features should be fully integrated into the site regardless of degree of access provided by the trail.

8.2 LEVELS OF DEVELOPMENT
-Refer to Section II; 2.0

8.3 SPACE ALLOWANCES AND REACH RANGES
-Refer to Section II; 3.0

8.4 OUTDOOR RECREATION ACCESS ROUTES
-Refer to Section II; 5.0

8.5 RECREATION TRAILS
-Refer to Section II; 6.0

8.6 PARKING
-Refer to Section II; 7.0

8.7 RESTROOM FACILITIES
-Refer to Section II; 8.0

8.8 TELEPHONES (ADAAG 4.31)
-Refer to Section II; 9.0

8.9 DRINKING FOUNTAINS (ADAAG 4.15)
-Refer to Section II; 10.0

8.10 HAND PUMPS AND HYDRANTS
-Refer to Section II; 11.0

8.11 TRASH RECEPTACLES
-Refer to Section II; 12.0

8.13 BENCHES
-Refer to Section II; 15.0

IV. SNOW FACILITIES ACCESSIBILITY RECOMMENDATIONS

1.0 DEFINITIONS:

Note: The definitions marked "*" are not included in ANSI B77.1 Passenger Tramway Standards and should be considered by the B77.1 committee for consistency.

Access Route. The connecting route(s) between parking facilities and the developed structures, staging areas, and snow activity areas.

ADAAG. Americans with Disabilities Act Accessibility Guidelines.

Adaptive Skier. A skier that uses adaptive equipment due to functional limitations.

Adaptive Equipment. Specialized equipment used by an adaptive skier for purposes of skiing.

***Adaptive Equipment Securement Line.** A line with attachment hardware to connect a skier sitting in adaptive equipment to the lift while riding the lift.

Bi-ski. An orthotic seating system mounted on a mechanism that articulates left and right angulating two side cut skis. Can be used with or without outriggers.

Mono-ski. An orthotic seating system with a mechanical suspension interface utilizing a shock absorber to position the skier over a single alpine ski. Used with outriggers.

Outrigger. A forearm crutch with a ski tip mounted at a pivoting base.

Ski Bra/Ski Stabilizer. A metal device clamped to the tips of the skis connected by an eyelet for positioning the ski tips together.

Sit-ski. A sled-like device with a concave tunnel section beneath it that channels snow past inward facing edges. Used with individual hand picks or a long kayak-type pole.

Aerial Tramways. Aerial tramways (reversible) are those tramways on which the passengers are transported in cable-supported carriers and are not in contact with the ground or snow surface, and in which the carriers reciprocate between terminals (ANSI B77-1-1992-1.4.2).

Alpine Skiing Areas. A mountain facility with ski trails and aerial tramways intended to provide transport of skiers up the hill for purposes of skiing.

***Approach Path.** The path from the point where a skier waits before moving to the loading point.

Attendant. The individual assigned to particular duties or functions in the operation of a tramway. Also see conductor - 1.4.17 (ANSI B77-1-1992-1.4.4).

Base Area Facilities. May include, but is not limited to built structures which provide access to base area services. Physical elements within a facility may include but are not limited to one or more of the following elements: Bathrooms, showers, ski storage, locker and changing areas, cafeteria, restaurant, ski repair, ski patrol, ski shops, ticket windows, map and information areas, ski school office, day care, first aid, and lodging.

Base Area Services. May include, but are not limited to, one or more of the following: food, ski repair, day care, first aid, and information.

Cabin. An enclosed or semi-enclosed compartment for transporting passenger; most often used on aerial tramways and detachable grip aerial lifts (ANSI B77-1-1992-1.4.10).

Carrier. The structural and mechanical assemblage in or on which passengers of a tramway system are transported. Unless qualified, the carrier includes, for example, the carriage or grip, hanger, and cabin or chair (ANSI B77-1-1992-1.4.11).

Chair. An open or semi-open seat used on an aerial lift (ANSI B77-1-1992-1.4.12).

***Chair lift.** An aerial tramway fitted with chairs.

***Chair lift approach path.** The path from the "wait here" point until the lift loading point.

***Lift Corrals/and waiting area.** Waiting area for skiers as they move toward the approach path to the lift.

Detachable Grip Lifts. Tramway systems on which carriers circulate around the system alternately attaching to and detaching from a moving haul rope(s). The tramway system may be monocable or bicable (ANSI B77-1-1992-1.4.20).

Emergency Shutdown. A shutdown is a stop that occurs when it is detected that the normal stop, service stop, or both, have failed to function properly and takes priority over all other stop functions or devices. When initiated, one or more brakes shall be applied and power shall be removed from the power unit. (ANSI B77-1-1992-1.4.22).

***Evacuation System.** A harness used for purposes of unloading skiers from lift facilities during an emergency lift evacuation.

Fixed Grip Lifts. Tramway systems on which carriers remain attached to a haul rope. The tramway system may be either continuous or intermittent circulation, and either monocable or bicable (ANSI B77-1-1992-1.4.24).

Foot Passenger. Any person utilizing a passenger tramway who is not a skier (ANSI B77-1-1992-1.4.25).

Gondola. A name used to describe a detachable grip aerial lift using cabins, and a cabin used on an aerial lift (ANSI B77-1-1992-1.4.26).

Grade. The percent used in this specification is an average of the values for the area defined.

***Lift Loading Area/Lift Line Area.** The area adjacent to the aerial tramway with lift corrals and waiting areas that are integrally related to the operation of the lift.

***Lift Loading Point.** The specific point at which a skier must be positioned for getting onto a chair lift. Also referred to as the "stand here" point.

Nordic Ski Areas. Developed cross country skiing areas which provides at a minimum maintained trails, parking and restrooms. Additional services may also be provided i.e. restaurants, ski shops, lodging, etc.

Normal stop. A stop in which the prime mover may be involved in braking and in which the tramway comes to rest in a controlled manner. Also see service stop - 1.4.41 (ANSI B77-1-1992-1.4.33).

On Mountain Facility. A facility located on the mountain that provides customer services. Usually only accessible by skiers wearing ski equipment, utilizing aerial tramway facilities and ski trails. Includes most services available at the base area facility.

Operator. The individual in charge of a tramway. Also see attendant - 1.4.4 (ANSI B77-1-1992-1.4.34).

Passenger Tramway. Passenger tramway includes all devices that carry, pull, or push passengers along a level or inclined path (excluding elevators) by means of a haul rope or other flexible element that is driven by a power unit remaining essentially at a single location (ANSI B77-1-1992-1.4.36).

Service Stop. A stop that occurs in a controlled manner without the power source being involved in the braking process. Also see emergency shutdown - 1.4.22 (ANSI B7-1-1992-1.4.41).

Shall. This verb is to be used to convey a strict requirement, from which the reader/user may not deviate in order to be considered in conformance with the standard (ANSI B77-1-1992-1.4.42).

Should. This verb is to be used to convey a recommendation, describe a recommended practice or procedure, or introduce a related standard or publication (ANSI B77-1-1992-1.4.50).

Sightseeing Activities-Passenger Tramway. Tramway facilities intended to provide transport of people up or across an area for purposes of viewing and or/transport to a remote facility, lookout or platform.

Skier. Any person utilizing a device that attaches to at least one foot or the lower torso for the purpose of sliding on a slope. The device slides on the snow or other surface of a slope and is capable of being maneuvered and controlled by the person using the device (ANSI B77-1-1992-1.4.51).

Ski Trail. Designated areas on mountains intended to hold snow for skiers to ski on.

Skier Staging Area. An area with an approximately level sub-surface covering an area on the snow loading area intended for skiers to put on or get into their equipment for purposes of skiing.

Slope. (See Grade)

Snow Access Route. An access route that is intended to provide a route of travel from one point to another which is intended to have snow on it. The route between the skier staging area and aerial tramway would be one example of a snow access route.

Snow Activity Area. An area designated for a snow activity such as cross country skiing, snowmobiling, snow shoeing, etc.

Snow Grooming Equipment. Machinery intended for grooming of ski trails and outdoor access routes and snow access routes.

Snowline. The point that has been designed to be the transition between surfaces designed to be

covered with snow and those which are routinely cleared of snow. The actual snowline will vary depending on the snowfall and melt.

Stop gate. A type of automatic stopping device that, when actuated by a passenger's weight, contact, or passage, will automatically stop the tramway (ANSI B77-1-1992-1.4.52).

Stop. A function initiated by a command that decelerates the tramway and brings it to rest. Also see brake - 1.4.7 (ANSI B77-1-1992-1.4.53).

Sub-Surface. A firm and stable sub-surface that may be structural or natural. Sub-surfaces may be rendered unstable due to climatic conditions or changes in weather. Firm and stable sub-surfaces are generally created at or along lift loading points, lift approach paths, lift loading area corrals and waiting lines and along access routes.

***Surface.** The covering, either structural or natural, over the sub-surface. At snow facilities the surface may be snow.

Supervisor. The individual in responsible charge of passenger tramway operations and personnel. Also see operator - 1.4.34 (ANSI B77-1-1992-1.4.55).

Surface Lifts. Those tramways on which passengers are propelled by means of a circulating overhead wire rope while remaining in contact with the ground or snow surface. Connection between the passengers and the wire rope is by means of a device attached to, and circulating with, the haul rope, known as a "towing device." (ANSI B77-1-1992-1.4.56).

Tows, Fiber Rope. Fiber rope tows are those tramways on which the passengers grasp the circulating fiber rope and are thus propelled while supported by the ground or snow surface. The haul rope remains adjacent to the passenger track at an elevation that permits passengers to maintain their grasp on the rope throughout that portion of the tow length that is designed to be traveled (ANSI B77-1-1992-1.4.59).

Tows, Wire Rope. Wire rope tows are those tramways on which the passengers grasp a towing handle attached to a circulating wire rope and are propelled in one direction only by that rope while remaining in contact with the ground or snow surface. The haul rope remains adjacent to the track of the passengers at an elevation that permits them to maintain their grasp on the tow handle throughout that portion of the tow length that is designed to be traveled (ANSI B77-1-1992-1.4.60).

Tramway. As used in this standard, this term refers to passenger tramway and its definition. See 1.4.36 (ANSI B77-1-1992-1.4.63).

Unloading Point. The point at which the passengers stand up and disembark the aerial tramway.

2.0 GENERAL

Snow activities are expected to operate in adverse weather conditions. The design, construction, operation and maintenance of facilities to serve snow activities must take these climatic conditions into consideration. A fundamental consideration of snow activity is a sliding motion for participants and equipment to include adaptive equipment on surfaces of snow and ice. Individuals participating have the interest in pursuing a high risk activity in rugged outdoor terrain in extreme climatic conditions.

In the operation and maintenance of facilities or the major renovation of existing facilities, these accessibility guidelines shall be applied to the extent that it is readily achievable, doing so within the constraints of the climate, weather conditions and mountain terrain. Based on these conditions and aspects of climate and terrain, if full compliance with the guidelines cannot be attained, then a programmatic solution to make the facilities accessible will be required.

2.1 SUB-SURFACES

Sub-surfaces shall be maintained to meet the requirements of these guidelines within the constraints of changing weather conditions. For example, if a snowfall occurs at a rapid rate it would not be possible to maintain the requirements of these guidelines on a continuous basis. In another situation warm weather can cause melting and may render a sub-surface unstable.

2.2 SURFACES

Those surfaces that people walk or directly ski on. In a snow facility environment, the surface on an access route may be covered with fresh snow.

3.0 PARKING

3.1 LOCATION

Accessible parking spaces shall comply with ADAAG 4.6.2 and will be located on the shortest accessible route of travel from adjacent parking to base area facilities or snow activity areas. The maximum distance from the furthest accessible parking space and/or accessible transportation alternative to an accessible entrance of the base area facilities or snow activity areas shall not exceed 300 feet unless accessible transportation is provided.

Rationale: Accessible parking facilities are of unique importance to persons with disabilities. The access route between the parking facility and ski activity area may often be covered with snow. Therefore, maximum distances between the parking facility and base area facilities or snow activity area have been defined.

3.2 REQUIREMENTS

Accessible parking shall comply with ADAAG sections 4.6.1, 4.6.3 - 4.6.6. The sub-surface of parking may be snow provided it is maintained in a firm and stable condition. A maximum allowable slope of 3% shall be allowed in all directions. The surface may at times have loose or new snow.

Rationale: Drainage due to melting and freezing is particularly bothersome for ski areas. Maintenance of surfaces is difficult. Snow is allowed as a sub-surface due to many environmental limitations for construction and the season of operation in areas with significant snowfall and snowpack.

3.3 DROP OFF LOCATION

An accessible drop off location shall be provided such that the maximum distance from the drop off location to an accessible entrance of the base area facilities or snow activity areas shall not exceed 100 feet.

Rationale: People with disabilities have difficulty in winter conditions especially when transporting ski equipment.

4.0 ACCESS ROUTE

Rationale: Since access routes at base area facilities can often be covered with snow, the maximum distance for those access routes has been specified. One must keep in mind that all skiers wearing ski boots have impaired mobility.

4.1 GENERAL

All access routes shall comply with 4.0.

4.2 LOCATION

At least one access route shall connect accessible parking facilities, all base area facilities, and snow line and/or skier staging area(s).

4.3 REQUIREMENTS

Access routes shall comply with requirements for outdoor recreation access routes. Please refer to Section II (5.0) of this report.

4.4 SUB-SURFACE

The sub-surface of an access route shall be firm and stable and may be structural and/or snow. Sub-surface, if made of snow, may be rendered unstable due to climate conditions or changes in weather.

4.5 SURFACE

The surface of an access route may be snow.

5.0 BASE AREA FACILITIES

Rationale: All new facilities at the base area shall be accessible and comply with ADAAG.

5.1 GENERAL

Bathrooms, showers, ski storage, locker/changing areas, cafeteria/restaurants, ski repair, ski patrol, shops, ticket windows, map/information areas, ski school, day care, and first aid and other facilities located at the base area shall comply with 5.0.

5.2 REQUIREMENTS

Base area facilities shall comply with ADAAG.

5.3 STORAGE

If storage areas are provided for the general public then these storage areas shall accommodate wheelchairs, sit-skis, mono-skis, and other adaptive equipment.

6.0 SKIER STAGING AREA

Rationale: All skiers, particularly those that are just learning, benefit from having a level area for putting on and removing their ski equipment. This is known as a skier staging area and should have some accessible specification.

6.1 SIZE

The skier staging area shall be at minimum of 8 ft x 20 ft.

Rationale: The size of the skier staging area should accommodate the number of skiers that will be using the area at any one time and allow for more than one person at a time to use the area.

6.2 SLOPE

The skier staging area shall be approximately level sub-surface with a maximum slope in all directions of 3.5%.

6.2 LOCATION

A skier staging area shall be as close as possible to the accessible entrance to the base area but no greater than a distance of 300 ft. from all base facilities or on mountain facilities and should be in the same general location that other skiers use.

7.0 SNOW ACCESS ROUTE

Rationale: Aerial passenger tramways and other services may be located at points that are not accessible except by crossing areas covered with snow. These routes shall meet specific requirements that are different from ADAAG access routes. Snow access routes should be designed such that snow grooming equipment can maintain them.

7.1 GENERAL

A snow access route may be used to provide the shortest possible accessible route to the lift serving the easiest ski trails. If using that lift allows a skier to access other base lifts and all other areas of the mountain, then another snow access route is not required. If intermediate and advanced ski trails are only accessible via other lifts at the base area, then these lifts shall have snow access routes to them.

Rationale: To provide the skier using adaptive equipment with access to the lifts that service all types of skiing terrain offered at the facility.

7.2 EXCLUSIONS

If the passenger tramway is located below the base area facility or a major on-mountain facility, then the snow access route is not required to comply with 7.3 through 7.8. If a lift is located below the base facility or a major on-mountain facility, then a route that meets the specifications for an easier trail designation as defined by the National Ski Area Association (NSAA), shall be provided unless the lift serves only more difficult or most difficult terrain.

Rationale: If the lift is below the base area facility or a major on-mountain facility, the skier can ski down to the lift. The easiest trail designation is in consideration of the beginner skier that will need to access the lift. If the lift serves only more difficult or most difficult terrain, skiers who would use the lift should be able to negotiate the access to the lift. Generally, trail designations as accepted and defined by the NSAA are easier, more difficult, and most difficult.

7.3 WIDTH

The snow access route shall have a minimum clear width of 8 ft. The snow access route should be designed to be maintainable by snow grooming equipment.

Rationale: The minimum width of the snow access route has been defined as 8 feet to accommodate skiers that are wearing skis that are generally about 6 feet long and to allow maneuvering. Snow grooming equipment is usually 8 to 16 feet wide and thus the snow access route would be groomed to this width.

7.4 LENGTH

The length of a snow access route shall not exceed 600 ft., unless the route is in a downhill direction.

Rationale: Snow conditions are always variable and pushing, walking and use of adaptive equipment for this distance to a lift is difficult.

7.5 SLOPE

The least possible slope shall be used for any uphill snow access route. The maximum slope of the sub-surface of a snow access route when used for uphill access shall not exceed 5%.

7.6 CROSS SLOPE

The least possible cross slope shall be used for any snow access route. The maximum cross slope of the sub-surface of a snow access route shall be 3.5%.

Rationale: Maintaining the cross slope with snow grooming equipment will require a tolerance greater than 2%. This work is generally done at night with snow grooming equipment in the dark.

7.7 LANDINGS

If the slope of the sub-surface and surface of the snow access route is greater than 3.5% to 5% it shall have (6′ x 8′) landings at a minimum of 300 ft. intervals that are approximately level. The sub-surface of the landings should have a maximum slope of 3.5% in any direction.

Rationale: The landing is to provide a point where the skier can rest without sliding back down the snow access route. The minimum size of the landing is based on the length of the skis being approximately 6 ft.

7.8 SUB-SURFACE

The snow access route shall have a firm and stable sub-surface which may be structural or constructed of snow.

Rationale: Snow access routes are intended to be used as skier or pedestrian access routes. They are not intended to be maintained as cleared or sanded surfaces.

7.9 ALTERNATIVES

Based on environmental site constraints, a parking or shuttle service may be provided to passenger or aerial tramways in lieu of a snow access route.

8.0 AERIAL PASSENGER TRAMWAY - All Sections Reserved (Pending Research with the Exception of 8.2 and 8.10)

Rationale: It is recommended that all sections of 8.0 be reserved pending further research with the exception of 8.2 and 8.10. At this time there is not enough information available to establish firm standards in this area. The ANSI B77 Committee is recognized as the authority in the area of establishing passenger tramway standards and they have not had time to consider the proposed guidelines. Currently, all 50 States have adopted the ANSI B77 standard regarding aerial tramway design requirements. Several accessibility issues have been raised that are not currently addressed by B77. The items in this section address the use of aerial passenger tramway facilities for persons with disabilities.

Preliminary research has been conducted by an independent research company. The investigators examined published anthropometric data on children and adults to determine the optimal seat height for access to the majority of non-disabled persons. A pilot research study was also conducted to examine the effects of various adaptive ski equipment seat heights on the functional abilities of both novice and

expert skiers. Several adaptive ski devices were analyzed with reference to anthropometric data to determine functional limitation of both the equipment and the user. All research conducted to date has indicated that a seat height of 18 inches would provide access to the majority of both disabled and non-disabled skiers and is very close to the functional limits of skiers using adaptive ski equipment.

In order to establish appropriate accessibility guidelines, further research needs to be conducted. The research period will be for one year only. Research will be conducted at several different geographically located ski areas with varied climatic conditions. The purpose of this research will be to determine the appropriate seat height thickness and profile for the design, installation and maintenance of ski lifts used in the United States. The research shall take into account the needs of skiers with disabilities that utilize adaptive equipment including sit-skis, mono-skis and bi-skis. The research shall also take into account universal access considerations for children, adults and people of short stature in addition to skiers using adaptive equipment. Selection of test subjects shall be based upon and in consideration of anthropometric data that exists for children and adults. The research process will evaluate: seat heights at a range from 15 to 23 inches; seat thickness from 2 to 6 inches; approach paths from level to 10%; and off ramp angles of up to 40%. Aerial tramways used for foot passengers only, surfacing of approach paths, loading points, seat profile, safety and retention devices will also be researched. The research shall be conducted by a representative group of adaptive skiers, lift manufacturers, ski area operators, adaptive equipment manufacturers, ANSI B77, and other appropriate entities as deemed necessary. This subcommittee recommends that the Access Board request the ANSI B77 Committee to lead this research effort within the stated time.

In addition, research is needed in non-ski areas where incline elevators are used for accessing areas of unique terrain. Incline elevators have great potential for providing access in outdoor recreation areas of steep terrain. However, the current ANSI standards severely restrict this use and should be revised.

8.1 LOADING AND UNLOADING AREAS - (Reserved Pending Research)

Existing ANSI B77.1-1992 3.1.1.9 text reads:

> "Platforms, ramps, corrals, and staging areas comprising the loading and unloading areas of an aerial lift are integrally related to its operation. They shall be designed and installed in conformance with the applicable criteria listed in 1.3."
>
> "Handrails, nets, steps or ramps shall be provided to reduce the risk of injury to the passengers and maintenance and operating personnel, when required."
>
> "Terminals, towers, and other structures or obstacles adjacent to the loading and unloading areas shall be designed or guarded to reduce the possibility of entanglement with these items."

8.2 LIFT CORRALS AND WAITING AREAS

The slope and cross slope of the sub-surface on lift corrals and waiting areas shall be as level as possible. The slope of the sub-surface on lift corrals and waiting areas shall not exceed 3.5% in all directions. There shall be no objects protruding into the pathway.

Rationale: Having a level lift line environment will make it easier for all skiers to move toward the lift loading while wearing skis. Skiers using adaptive equipment and skiers with visual impairments have difficulty maintaining their position or negotiating uneven terrain. Skiers using adaptive equipment also need to prepare their equipment for loading onto the lift. For example a mono-skier has to raise and lock their equipment into the chairlift loading position. This position is less stable for the skier which needs as level a surface as possible.

8.3 **Approach Path** (Reserved Pending Research)

The sub-surface of the approach path to the loading point shall be as level as possible. The slope of the sub-surface of the approach path shall be downhill not to exceed 2%. Mats or surfaces that substantially reduce slippage for skiers to move forward to the chair lift loading point shall be covered with snow.

Existing ANSI B77.1-1992 3.1.1.9.1.1 text reads:

> "Approach paths to the loading platform shall be approximately level or slightly down-sloped to facilitate passengers moving to the loading point. The approach path shall be such that waiting passengers have a view of the loading area. The load waiting area shall be free of obstructions and marked, roped, or fenced in a manner to guide passengers to the loading marker."

Rationale: Skiers with visual impairments and skiers using adaptive equipment need a near level surface to move to the lift point and not beyond the lift point. Non-slip surfaces make moving to the lift point difficult for skiers using adaptive equipment who cannot walk or shuffle their skis. For example a mono-skier or a skier with a ski bra on will have great difficulty moving forward to the loading point over a surface that reduces slippage.

8.4 **LIFT LOADING POINT** (Reserved Pending Research)

The sub-surface at the loading point shall be as level as possible. The sub-surface at the loading point shall be downhill not to exceed 2%. A designed structural means of creating a fixed level sub-surface shall be built to assist in maintaining the proper snow height in the lift loading area.

Existing ANSI B77.1-1992 3.1.1.9.1.1 text reads:

> "The loading area length, profile, and loading point shall be installed according to the carrier speed, carrier type, conveyor system, passenger type, and aerial lift design."
>
> "The loading point shall be marked as to where the passengers are to stand using a loading marker located in/on the platform/snow surface. The width of the loading marker shall not be greater than the carrier width."

Rationale: It is necessary to maintain a consistent and level loading point to facilitate safe loading onto the lift.

8.5 **SEAT HEIGHT** (Reserved Pending Research)

The height of the unloaded chair shall be maintained 18 inches above the snow height at the loading point and unloading point.

Rationale: There is no national standard to follow regarding seat height. A consistent seat height is necessary for the loading of skiers using adaptive equipment. A maximum height will address the needs of children, short skiers and skiers using adaptive equipment. For example mono-skiers have equipment that locks into a raised position that can then be pushed to the loading point using outriggers to be loaded onto the chairlift. The mono-skiers ability to balance and propel themselves with outriggers reaches a limit at a chair height of 18 inches.

8.6 **SEAT THICKNESS** (Reserved Pending Research)

The thickness of the chairlift seat from the top of the seating surface to the lowest point of the seating surface at the front edge shall be a maximum of 5 inches.

Rationale: The thicker the front of the chairlift seat the more likely skiers will get their boots and ski boot heaters caught under the chair. Skiers using adaptive equipment (mono-skis and bi-skis) will clamp onto the front edge of the chairlift seating surface if the front edge is too thick.

8.7 CHAIRLIFT AUTOMATIC STOP DEVICE (Reserved Pending Research)

Automatic stopping devices shall be at the top of each lift. They shall be positioned to stop the lift if a skier fails to exit the chair lift.

Rationale: The ANSI B77 standard does not currently require this for detachable lifts and should be required. This is in the final stages of acceptance by ANSI B.77.1.

8.8 CHAIRLIFT SAFETY EQUIPMENT (Reserved Pending Research)

8.8.1 Adaptive Ski Equipment - Safety. Mono-skis, sit-skis, bi-skis and other adaptive equipment in which the skier sits in is required to have an adaptive equipment securement line which may be connected to the chairlift chair after loading. The line will be removed prior to unloading.

Rationale: A joint committee of National Ski Patrol and National Ski Areas is addressing this issue and this should be the subject of future research outlined in 14.0.

8.8.2. Mono-skis, sit-skis, bi-skis and other adaptive equipment in which skiers sit in shall have an evacuation harness. (See test procedure in 13.0).

Rationale: A safety line would keep the skier in the chair. An evacuation harness specific to the piece of adaptive equipment is required since the ski patrol would not have harness equipment specific to each skiers adaptive equipment.

8.9 EXIT RAMP (Reserved Pending Research).

The sub-surface of the exit ramp from the chair lift shall be sloped downward and shall not exceed 20%. A minimum slope of 5% shall be provided.

Existing ANSI B77.1-1992 4.1.1.9.2 - Unloading Areas text reads:

> "The unloading point where the passengers stand up and disembark shall be marked on or near the unloading surface. For unloading skiers on a snow surface, this point shall be at the breakover point where the exit ramp starts. This point shall be signed "Unload Here," as required in 4.3.1.1.2(f). An exit ramp for skiers shall not be sloped downward more than 40 percent."

This recommendation is currently in conflict with ANSI B77.1-1992.

Rationale: These guidelines recommend a minimum slope of 5% to facilitate skiers getting off and away from the lift. Skiers using adaptive equipment very often do not have the ability to ski, walk or propel themselves away from the exit ramp environment without the assistance of gravity. Exit ramp slopes greater than 20% present a hazard to skiers using adaptive equipment.

8.10 LIFT LOADING AREA REST POINT (Recommendation only)

A rest area with a seat or chair may be provided adjacent to the corral or various lift line areas. The height of the sitting surface should allow the skier to sit while wearing skis and may be moveable.

Rationale: At a ski area that requires skiers with disabilities to wait in long lift lines it may be necessary for a skier to sit or lay down to rest. For example a single leg amputee may not have the standing endurance to wait in a 20 minute lift line. Some ski areas allow skiers with disabilities to bypass the lift line and a rest point would not be as important in this situation.

9.0 AERIAL PASSENGER TRAMWAYS - FOOT PASSENGERS ONLY (Reserved Pending Research)

9.1 LOADING POINT (Reserved Pending Research)

Cabins on sightseeing lifts shall comply with ADAAG sections 4.13.5 and 4.13.8. An access route that complies with ADAAG requirements shall connect the tramway, conveyer and other mechanisms to the base facilities. A 5 ft. x 5 ft. clear, level area shall be provided immediately adjacent to the upper, lower, and any intermediate terminals of

such mechanisms to facilitate transfer from a wheelchair to the seat, car, or platform.

9.2 LOADING AND UNLOADING SEAT HEIGHT (Reserved Pending Research)

Seats shall be located 16 to 20 inches above the clear, level area. Accommodation for transport of manual wheelchairs or adaptive equipment shall be made.

10.0 ON MOUNTAIN FACILITY

Rationale: Skiers need access to the on mountain facility as well as to the base area facilities. Adaptive equipment must be provided to enable skiers with disabilities to use the on mountain facility since their adaptive equipment has most likely been stored at the base facility.

10.1 REQUIREMENTS

On mountain facilities shall comply with ADAAG.

10.2 STAGING AREA

There shall be at least one skier staging area at the on mountain facility. The skier staging area shall have a communication device or mechanism for contacting personnel within the on mountain facility to obtain assistance. For example, a call button or telephone would enable the skier with a disability to communicate with personnel inside the facility for assistance.

10.3 ACCESS ROUTE

There shall be an access route from the staging area to the on mountain facility and/or services provided.

10.4 MOBILITY ASSISTANCE DEVICES

Wheelchairs, quick-adjust crutches and canes (at least one set of each) shall be available at the on mountain facility entrance for use by the public.

10.5 TRAIL ACCESS

A snow access route shall connect the skier staging area to the ski trails.

11.0 PUBLIC TRANSPORTATION SYSTEMS

Rationale: There are specific considerations for skiers with disabilities regarding the storage or carrying of adaptive ski equipment on transportation systems.

11.1 REQUIREMENTS

Public transportation systems shall provide a means of carrying adaptive ski equipment such as sit-skis, mono-skis and bi-skis.

12.0 COMMUNICATION

12.1 ASSISTIVE LISTENING DEVICES FOR HEARING IMPAIRED SKIERS

A means to enable skiers with communication and hearing impairments to communicate using on mountain telephone facilities and telephones at on mountain facilities shall be provided.

Rationale: Skiers with speech and hearing disabilities need to have equal access to emergency, safe information systems on the ski trails as well as at within base and on mountain facilities.

12.2 SIGNAGE LOCATION

Signage shall be located such that it does not protrude into areas that would present hazards to persons with visual impairment in and around aerial tramway lift facilities. Signage shall comply with ADAAG. In addition, signage should direct adaptive skiers to the closest accessible facility and communications on the mountain.

Rationale: Skiers with visual impairments cannot detect overhanging signage into areas in the lift environment.

13.0 SAFETY REQUIREMENTS FOR ADAPTIVE EQUIPMENT (Reserved Pending Research)

13.1 ADAPTIVE EQUIPMENT

Rationale: In case of an emergency, ski patrol personnel must evacuate skiers from the chairlift. For skiers that ride the lift with their adaptive equipment it is necessary to be evacuated while in

the equipment. Ski patrol personnel cannot be expected to carry evacuation hardware that would accommodate every type of adaptive equipment.

13.2 GENERAL

Adaptive equipment that the skier sits in when they ride the chairlift facilities must have evacuation hardware attached. The adaptive equipment shall also have a lift securement line to connect the adaptive equipment to the lift while riding the lift.

13.3 TEST PROCEDURE

The adaptive equipment shall be loaded with a 100 kg (220 lb) of mass. The mono-skis, sit-skis, bi-skis and other adaptive equipment shall be dropped from a height of 5 feet onto the evacuation harness and on to the lift securement line to test the strength of the harness.

13.4 PERFORMANCE CRITERIA

The adaptive equipment, evacuation harness and the life securement line shall be undamaged after the tests are completed.

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RECOMMENDATIONS FOR
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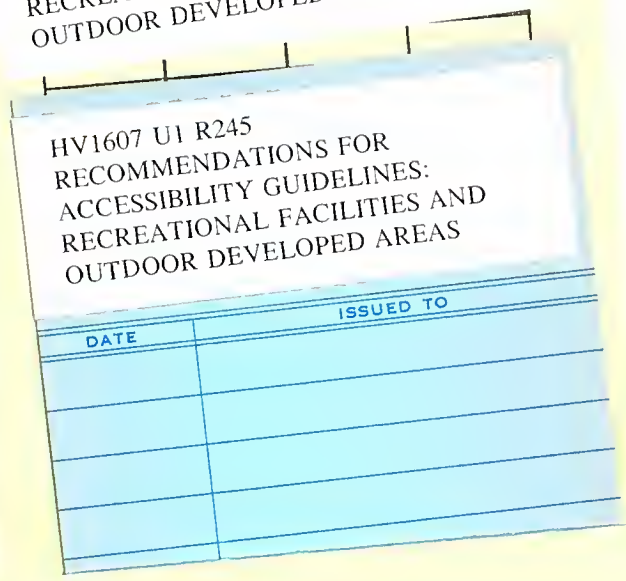

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